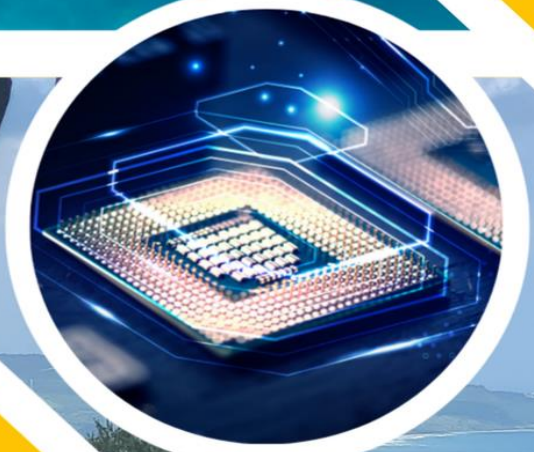
UWI
CAVE HILL CAMPUS
BARBADOS, WEST INDIES

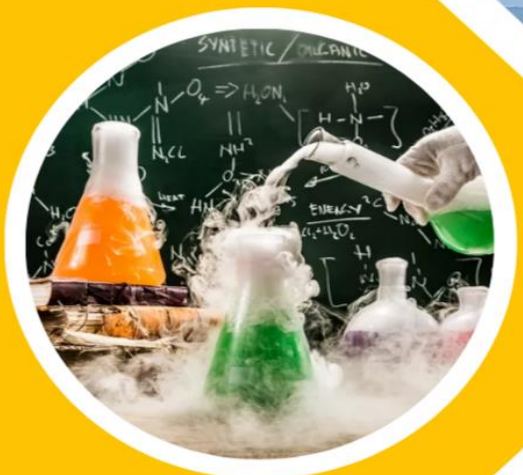
Faculty of Science and Technology
THE UWI CAVE HILL CAMPUS

FACULTY OF SCIENCE AND TECHNOLOGY

Graduate Handbook

2025 - 2026





THE UNIVERSITY OF THE WEST INDIES
CAVE HILL CAMPUS

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Cover Art by Kyle Remy a 21-year-old, self-taught Graphic Designer, currently pursuing a BSc in Biology with a Minor in Ecology within the FST at the University of the West Indies.

"My process of learning graphic design began in 2019, when I first experimented with creating digital art. What started as simple curiosity quickly became somewhat of a deep passion, driving me to explore illustration, and creative media. Over the years, I've developed a style that blends experimentation with precision, and I'm always seeking new techniques and ideas to refine my craft. Every project is a chance to learn, grow, and bring brand new perspectives to life through my designs."

THE UNIVERSITY OF THE WEST INDIES

CAVE HILL CAMPUS

THE FACULTY OF SCIENCE AND TECHNOLOGY

POSTGRADUATE PROGRAMME REGULATIONS AND SYLLABUSES

2025-2026

WWW.CAVEHILL.UWI.EDU/GRADSTUDIES

Every attempt has been made to ensure that the information in this booklet is accurate at the time of printing. It is intended for students entering programmes in the Academic Year 2025-2026.

Continuing students must refer to the programme regulations in force in their year of entry.

Students should consult their Programme Coordinator where clarification is required.

THE MISSION AND VISION OF THE UNIVERSITY OF THE WEST INDIES

MISSION

To advance learning, create knowledge and foster innovation for the positive transformation of the Caribbean and the wider world.

VISION

An excellent global University rooted in the Caribbean.

Table of Contents

ABOUT THE FACULTY OF SCIENCE AND TECHNOLOGY

This Faculty was first known as the Faculty of Natural Sciences. Later, this was changed to the Faculty of Science & Technology before becoming the Faculty of Pure & Applied Sciences. This has since reverted to the Faculty of Science & Technology which we believe better reflects our focus for the future.

Our full-time Academic Staff are mainly Caribbean nationals, but we are also very much an international Faculty with about one third of our lecturers drawn from countries far and wide. Our degree programmes are well-respected regionally and internationally with many of our graduates working or pursuing further studies overseas.

The Faculty comprises two Departments and a Centre: -

- Department of Biological & Chemical Sciences (BCS) – Undergraduate & Postgraduate programmes
- Department of Computer Science, Mathematics & Physics (CMP) – Undergraduate & Postgraduate programmes
- Centre for Resource Management and Environmental Studies (CERMES) – Postgraduate programmes.

The Faculty of Science & Technology at Cave Hill offers two distinct types of postgraduate programmes. Taught Masters (MSc) programmes provide specific skill sets and training; while MPhil and PhD Research degrees provide research opportunities under the supervision of a full-time member of the Academic Staff for those wishing to pursue careers in Science. The Faculty offers taught MSc programmes: The well-established MSc in Natural Resource and Environmental Management, an MSc in Information Technology (with streams in Enterprise Systems, Mobile Applications and Web Development), an MSc in Technology Entrepreneurship, and Postgraduate Diplomas in Information Technology and Technology Entrepreneurship. In 2014, the Faculty received approval to offer a new MSc programme in Biosafety.

The MSc in Natural Resource and Environmental Management is mounted by the Centre for Resource Management and Environmental Studies (CERMES) and has six specialisations and a non-specialisation stream. Students in the non-specialisation stream can choose courses from any of the specialisation streams being offered in the given

academic year, taking a maximum of two courses from any one stream.

Four of the specialisations are on offer in the Academic Year 2025-2026:

- Tropical Coastal and Marine Resource Management
- Climate Change
- Water Resources Management
- Land Management and Environmental Resilience

Two other specialisations – Applied Meteorology (in collaboration with the Caribbean Institute for Meteorology and Hydrology – CIMH), and Waste Management are not on offer in 2025-2026. CERMES also offers the MSc in Sustainable Energy Management, targeting professionals in the public and private sectors who must lead change, from small transition to large transformation, to use more renewable and sustainable energy sources. However, it will not be offered in 2025- 2026.

The research interests in the Faculty are diverse, addressing both fundamental questions in Science and Technology as well as finding scientific solutions to real-life problems facing Caribbean people. Faculty members also constitute an unmatched source of expertise to Governments, Non-Governmental Organisations and the Private Sector in providing technical advice.

DEAN, HEADS OF DEPARTMENTS, POSTGRADUATE COORDINATORS & THE SCHOOL FOR GRADUATE STUDIES & RESEARCH PERSONNEL

Faculty Office

Telephone:	(246) 417-4310/4311/4312
Fax:	(246) 417-4597
E-Mail:	fst@cavehill.uwi.edu
Website:	https://www.cavehill.uwi.edu/fst/home.aspx
Instagram:	@uwicavehill_fst or https://www.instagram.com/uwicavehill_fst/
Facebook:	/uwicavehillfst or https://www.facebook.com/uwicavehillfst

DEAN:	**Dr. Jeanese Badenock** BSc. (UWI), PhD (Dartmouth)
DEPUTY DEAN: **(Graduate Studies & Outreach)**	**Dr. Shane Austin** BSc (UWI), MSc (McGill), PhD (MUW)
DEPUTY DEAN: **(Academic/Undergraduate Affairs)**	**Dr. Darren Browne** BSc., PhD (UWI)
Administrative Assistant: **(Faculty Office)**	**Ms. Kay Browne** BSc, MSc (UWI)
Administrative Assistant: **(Projects & Planning)**	**Ms. Lisa-Ann Rollins** BSc, MSc (UWI)

Centre for Resource Management and Environmental Studies (CERMES)

Telephone:	(246) 417-4317/4339
Fax:	(246) 424-4204
E-Mail:	cermes@cavehill.uwi.edu
Website:	https://www.cavehill.uwi.edu//cermes/home.aspx

Director:	**Prof. David Yawson** BSc (University of CAPE Coast [UCC]), MSc (Wageningen University [WUR]), PhD (University of Dundee [UoD] & The James Hutton Institute [JHI])
Coordinator – MSc Natural Resource & Environmental Management; MPhil/PhD Programmes in Natural Resource Management; Environmental Studies (CERMES)	**Ms. Neetha Selliah** BSc (Surrey); MSc (UWI)

*The Caribbean Institute for Meteorology & Hydrology (CIMH)**

*** This is an Affiliate Institution**

Telephone:	(246) 425-4362
Fax:	(246) 424-4733
Email:	dfarrell@cimh.edu.bb; asealy@cimh.edu.bb
Website:	https://cimh.edu.bb/

Principal:	**Dr. David Farrell** BSc (University of Western Ontario), MSc, PhD (University of Manitoba)
Coordinator - CIMH Research Programmes:	**Dr. Andrea Sealy** BSc (Jackson State University), MSc (Pennsylvania State University), PhD (Howard University)

Department of Biological and Chemical Sciences (BCS)

Telephone:	(246) 417-4323
Fax:	(246) 417-4325
E-Mail:	bcs@cavehill.uwi.edu
Website:	https://www.cavehill.uwi.edu//fst/bcs/home.aspx

Head of Department:	**Dr. Thea Scantlebury-Manning** BSc, PhD. (Concordia)
Coordinator - MSc Biosafety:	**Dr. Angela Alleyne** BSc, MPhil, PhD (UWI)
Coordinator – BCS Research Programmes:	**Dr. Kelly Brathwaite** BSc, PhD (UWI)

Department of Computer Science, Mathematics & Physics (CMP)

Telephone:	(246) 417-4365/4465
Fax:	(246) 417-4597
E-Mail:	cmp@cavehill.uwi.edu
Website:	https://www.cavehill.uwi.edu//fst/cmp/home.aspx

Senior Lecturer & Head of Department:	**Dr. Peter Chami** BSc., PhD (UWI)
Coordinator – MSc Computer Science Programmes:	**Dr. Curtis Gittens** BSc (UWI), MSc, PhD (University of Western Ontario)
Coordinator – CMP Research Programmes:	**Dr. Mechelle Gittens** BSc (UWI), MSc, PhD (University of Western Ontario)

REPRESENTATIVES, OFFICE OF GRADUATE STUDIES AND RESEARCH

Telephone:	(246) 417-4910
Fax:	(246) 421-2109
Email:	gradstudies@cavehill.uwi.edu
Website:	https://www.cavehill.uwi.edu/gradstudies/home.aspx

Director: **School for Graduate Studies & Research**	**Prof. Dwayne Devonish** Telephone: (246) 417-4912
Senior Assistant Registrar: **Office of Graduate Studies & Research**	**Mr. Owen Ellis** Telephone: (246) 417-4902
Administrative Assistant: **Taught Masters Programmes**	**Ms. Tanya Taylor** Telephone: (246) 417-4901
Administrative Assistant: **Research**	**Mrs. Karene Holligan** Telephone: (246) 417-4907

GENERAL INFORMATION FOR POSTGRADUATE STUDENTS

The official regulations handbook for all Graduate Diplomas and Degrees is found on-line at www.cavehill.uwi.edu/gradstudies/. Students should familiarize themselves with the regulations, a few of which are highlighted here, and also note the following administrative information:

Electives

All programme electives are **not** offered every academic year and students are required to select from those on offer.

Registration

Every student is required to register within the first week of **every** semester until his/her degree has been awarded. Changes in registration are permitted to the end of the third week of the semester.

Registration is a two-part process:

1. The selection of courses on-line through Cave Hill On-Line (CHOL); and
2. The payment to the Bursary of all fees generated.

Re-registration for Thesis/Research Paper/Practicum

The requirement to register every semester continues while students are doing and writing up the Thesis/Research Paper/Practicum programme element. Note that if a student registers for the Research Paper/Practicum and does not complete this in the first semester of registration, regulations require him/her **to re-register** every subsequent semester until the Paper/Report has been submitted and graded.

If a student experiences any difficulty registering or re-registering it is his/her responsibility to inform the Graduate Studies Office within the first three weeks of the semester by email to gradstudies@cavehill.uwi.edu so that problems can be resolved.

Withdrawal

If at the end of the published registration period our records show that a student has not completed a registration, and that student is not on approved Leave of Absence, he/she will be ***Deemed to have Withdrawn*** from the programme and his/her name will be

removed from the student register. To be considered for re-entry to a programme after withdrawal requires re-application to the programme.

Examinations

Unless otherwise stated, examinations for courses in all programmes will be held at the end of the semester in which the courses were taught.

Examination Re-sits or Re-submission of Coursework

Candidates are required to pass in both written examinations and coursework at the first attempt. In respect of any candidate who fails the coursework or written examination at the first attempt, the Board of Examiners will recommend to the Campus Committee whether a second attempt should be permitted. If such a recommendation is approved, the student will be awarded a failing grade of FE (Failed Exam) or FC (Failed Coursework). This indicates that permission has been granted to re-sit the examination/re-submit coursework for that course the next time it is offered.

In such cases an ***Examinations Only***, registration must be done administratively, and students will need to contact the Graduate Studies Office within the first week of the relevant semester by email to gradstudies@cavehill.uwi.edu with details of the course for which they are to be registered. Students must not attempt to self-register for courses where Examination Only or Coursework Only registration have been approved.

This repeat registration attracts a per-credit fee.

Re-taking a Failed Course

Any student who was has received a Grade F in any course and has been permitted a second opportunity to take that course, is required to take the course in FULL. Such students must self-register using CHOL the next time the course is offered.

Requirement to Withdraw

Any candidate who receives a Grade Point Average (GPA) less than 2.0 in a given semester will be deemed to be performing unsatisfactorily and will be placed on warning. Any candidate who for a consecutive semester has a GPA less than 2.0 will be required to withdraw from the course of study as per the Grade Point Average Regulations (2021). Applications for re-entry from students who were *Required to Withdraw* are not normally

considered until two years have elapsed.

Distinction

Unless otherwise stated in the regulations of a specific Master's programme, the basis for the award of a degree with Distinction is:

- If the programme being followed **requires the completion of a Research Paper**, the candidate must obtain a Grade Point Average of 3.70 or above except where candidates have received an extension for their project reports and exceeded the maximum allowed of 1 year. Such cases will not be awarded Distinction unless the Board for Graduate Studies and Research decides on the particular case.
- If the programme being followed **does not require the completion of a Research Paper**, the candidate must obtain a Grade Point Average of 3.70 or above.

Also refer to the School for Graduate Studies and Research website at: https://www.cavehill.uwi.edu/gradstudies/resources/faculty.aspx for further details on other regulations, guides and policies to be noted by all Graduate Students, and the UWI Grade Point Average Regulations for Graduate Certificates, Diplomas, Taught Masters and Professional Doctorate Programmes at:

https://www.cavehill.uwi.edu/gradstudies/resources/gpa-regulations-for-graduate-certificates-diplomas.aspx.

GENERAL FACULTY REGULATIONS

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil, or nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Students in the MPhil and PhD degree programmes should discuss with their Supervisor suitable courses which would satisfy the credit requirements. Ideally, courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to present their up-to-date research or a research topic arising out of the candidate's research. Candidates will field questions put to them afterwards. When possible, the audience should also include the candidate's Supervisor and thesis supervisory committee members.

Guidelines for Graduate Seminars

All MPhil and PhD seminars must satisfy the following:

a. A minimum time of a half hour (1/2 hour) should be set for all seminar presentations.
b. At least one Advisory Committee Member and the student's Supervisors should be present at the research seminar, either in person or virtually.
c. Ensure that the date and time set for the seminar is acceptable by all the members who should be in attendance (i.e., the Supervisors and Advisory Committee).
d. A Questions and Answers Section should be held after each student's seminar presentation for at least ten minutes, where the Advisory Committee and Supervisors canask the students questions first, followed by questions from the general audience.

Additionally, students are not required to self-register for the seminars in CHOL. Once the seminar has been completed, assessed and the Reporting form submitted then they will

be administratively registered.

Thesis

Candidates are required to present and defend a Thesis of acceptable scope and quality for the degree. The Thesis must follow the guidelines set out in the University's Thesis guide.

Award of the Degree

The successful completion of the required coursework, the compulsory Seminar presentations and the Thesis will lead to the award of the Degree.

THE DEPARTMENT OF BIOLOGICAL & CHEMICAL SCIENCES (BCS)

Postgraduate Diploma/MSc Biosafety

Introduction

This programme in Biosafety is tailored to meet the demand for Biosafety expertise to control potential risks associated with the use of modern biotechnology products in trade, and to promote the benefits, awareness and understanding of modern biotechnology in the region. The programme will be delivered in a blended learning format, consisting of a mixture of online and face-to-face modes of delivery for several courses.

Objectives

The aims of this programme are to:

1. Create a cadre of skilled Biosafety experts with knowledge of biotechnology withinthe Caribbean Region;
2. Sustain the benefits of biotechnology in the region while demonstrating the needfor its safe application;
3. Provide students with Biosafety skills in biotechnology and the ability to identify the risks involved;
4. Provide a response to both national and regional Biosafety needs among various stakeholders as outlined in the Cartagena Protocol on Biosafety to the Conventionon Biological Diversity.

Entry Requirements

The general prerequisite for entry into the MSc/Postgraduate Diploma in Biosafety will be a Bachelor's degree from a recognized University at a minimum of Second Class Honours (or equivalent) in the following disciplines:

- Any Biological, Life or Natural Science.
- Any other discipline related to Biosafety, **or**
- Law (LLB) plus knowledge or working experience of Biosafety, **or**

- An appropriate Social Science, plus knowledge or working experience of Biosafety, **or** significant working experience in the Biosafety environment.

Persons with a Diploma **or** Certificate training in Biosafety or Biotechnology and significant working experience in the Biosafety environment will be considered on a case by case basis.

Candidates registering for one or more of these courses must be eligible for Postgraduate matriculation at UWI.

Duration

Full time students are expected to complete the MSc. programme in 15 months and part-time students in 30 months.

Students enrolled in the Postgraduate Diploma programme are expected to complete the programme in 8 months.

Programme Structure/Course of Study

MSc. Biosafety

To be awarded the MSc. in Biosafety, the student must complete 24 credits of the Core Courses in the programme, one Elective and a Capstone or Research Project consisting of 9 credits. All courses are offered in an online format, except BISF 6005.

Students are expected to complete a not-for-credit training course as an introduction to the online environment.

Postgraduate Diploma Biosafety

To be awarded the Postgraduate Diploma in Biosafety, the student must complete 22 credits in total in the programme, comprising three Core Courses and one Elective course. All courses are offered in an online format, except BISF 6005.

Students are expected to complete a not-for-credit training course as an introduction to the online environment.

LIST OF COURSES

Core

BISF 6000	Introduction to Biotechnology and Molecular Biology (6 credits)
BISF 6001	Biosafety, Biotechnology and the Environment (6 credits)
BISF 6002	Biosafety, Biotechnology and the Environment (6 credits)
BISF 6003	Biosafety of Genetically Modified Organisms (6 credits)
BISF 6900	Biosafety Research Project **(MSc students only)** (9 credits)

Electives

BISF6004	Legal Aspects of Biosafety in Biotechnology (4 credits)
BISF6005	Molecular Diagnostics of GMO/LMO (Lab Based Methods) (4 credits)

BCS MPhil/PhD Degrees

Entry Requirements

MPhil Candidates require at least an Upper-Second Class Honours degree with a strong background in the discipline into which entry is being sought. All research students must register initially for the MPhil degree but may later, with suitable progress, be upgraded to register for the PhD degree. In cases where the candidate already has an MPhil degree (or equivalent), direct entry to the PhD is possible.

Availability of Expertise and Resources

Admission is contingent upon whether candidates have a thesis proposal compatible with the expertise and resources available in the Department of Biological and Chemical Sciences (BCS).

Areas of Study

Major research interests of staff members in this department are: -

Biological Sciences

- Molecular Biology
- Ecology
- Behavioural Ecology
- Conservation Biology
- Marine Biology
- Malacology
- Sports Agronomy
- Post-Harvest Physiology
- Biochemistry of Vascular Disease
- Microbiology
- Microbial Ecology
- Microbial Biochemistry
- Food Microbiology
- Genetics

- Horticulture
- Plant Pathology

Chemical Sciences

- Natural Products Chemistry
- Clinical Organic Chemistry
- Chemistry Education
- Water Chemistry
- Environmental Chemistry
- Membrane Technology
- Heterocyclic Chemistry
- Supramolecular Chemistry
- Nanotechnology
- Organic Synthesis
- Bonding in Inorganic Chemistry
- Computational Chemistry

Environmental Sciences (pursued under the Faculty's Environmental Studies programme pp. 49-51)

- Geology
- Climatology
- Water Quality
- Marine Pollution

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil, or nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Students in the MPhil and PhD degree programmes should discuss with their Supervisor suitable courses which would satisfy the credit requirements. Ideally, courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to present their up-to-date research or a research topic arising out of the candidate's research. Candidates will field questions put to them afterwards. When possible, the audience should also include the candidate's Supervisor and thesis supervisory committee members.

Thesis

Candidates are required to present and defend a Thesis of acceptable scope and quality for the degree. The Thesis must follow the guidelines set out in the University's Thesis guide.

Award of the Degree

The successful completion of the required coursework, the compulsory Seminar presentations and the Thesis will lead to the award of the Degree.

LIST OF COURSES

Compulsory for All Students

FSAT 6004	Principles and Practice of Scientific Research

Available to All Students as necessary

FSAT6000	Communicating Science
FSAT 6002	Experimental Design and Analysis for Non-statisticians

Compulsory for All Students depending on their Programme

GRSM 6001	MPhil Research Seminar 1
GRSM 6002	MPhil Research Seminar 2

BIOC 6000	MPhil Biochemistry
BIOL 6000	MPhil Biology
CHEM 6000	MPhil Chemistry
ECOL 6000	MPhil Ecology
MICR 6000	MPhil Microbiology

GRSM 8001	PhD Research Seminar 1
GRSM 8002	PhD Research Seminar 2
GRSM 8003	PhD Research Seminar 3

BIOC 8000	PhD Biochemistry
BIOL 8000	PhD Biology
CHEM 8000	PhD Chemistry
ECOL 8000	PhD Ecology
MICR 8000	PhD Microbiology

Research Students may also be permitted (with the approval of their Supervisor) to take courses from other offerings within the Faculty.

THE DEPARTMENT OF COMPUTER SCIENCE, MATHEMATICS & PHYSICS (CMP)

*Postgraduate Diploma/*MSc Information Technology*

With Specializations in Enterprise Systems, Mobile Applications and Web Development – *NOTE: There will be no intake for this programme in the 2025/2026 academic year.

Introduction

The MSc. Information Technology programme is a revision of the MSc. Computing Innovation programme. The new name reflects its emphasis on cultivating students' ability to use Computer Science as a pathway to developing innovative technological solutions for local, regional and global organisations. The programme offers specializations in the areas of Enterprise Systems, Mobile Application Development and Web Development. The Postgraduate Diploma in Information Technology programme, formerly the Postgraduate Diploma in Computing Innovation programme, is a shorter programme that contains a subset of the courses found in the MSc. programme.

The ***Enterprise Systems*** **specialization** facilitates students' understanding of the available technologies that are best suited for IT solutions, as well as the issues involved in designing and developing IT solutions for organisations in the Caribbean. Students will acquire knowledge of how to design and develop enterprise IT services, develop strategies for identifying processes and issues that can benefit from technological solutions, and learn how to implement enterprise solutions.

The ***Web Development*** **specialization** will help students obtain the knowledge and skills required to create Web applications. In addition to creating applications, students will learn how to use application frameworks to build scalable, enterprise applications and use Web services to provide integration solutions.

The ***Mobile Applications*** **specialization** trains individuals in the development of applications for mobile devices. These applications have become a key part of the

strategies of businesses and organisations due to the sheer number of mobile devices currently in use both in developed and developing countries. The programme provides focused training in areas such as Android and iOS application development, quality assurance, interaction design and security. The training provided in this programme is therefore essential for the development of local, regional and global businesses.

Aims and Objectives

These programmes aim to:

1. Equip local and regional IT graduates with specialized training so that they can better position their own businesses, or the organisations in which they work, for growth in a global marketspace.
2. Enable entrepreneurs and established organisations to leverage new innovations in IT to increase their productivity and reduce costs.
3. Become a technology development resource for local and regional businesses that want to transform themselves into agile entrepreneurial firms.

The objectives of the programmes are to:

1. Equip students with the knowledge and skills needed to develop high-technology products in the Caribbean.
2. Encourage students to hone their IT skills with a view to impacting the local, regional and global marketspaces.
3. Make students aware of the legal, regulatory, ethical and social frameworks required to launch and sustain enterprise technologies that may have a global impact.
4. Enable students to conceptualise, formulate and implement solutions to organisational challenges using new and existing technologies.
5. Promote the analysis and evaluation of current business processes with the view to process re-engineering for improved efficiency and productivity.
6. Facilitate the development of new technologies, services or solutions in response to corporate challenges faced by local and regional enterprises.

Entry Requirements

Matriculation into the Postgraduate Diploma and MSc. Information Technology requires

at least a Lower-Second Class Honours Bachelor's degree in either Computer Science or Information Technology.

- Candidates without the matriculation qualification but with a Lower-Second Class degree in another discipline must successfully complete COMP1205 Computing I or its equivalent to enrol in the programme.
- Candidates seeking to take the Web Development specialization must successfully complete COMP2145 Software Engineering or its equivalent to enrol in the programme.

Applicants who do not possess the above entry requirements, but have significant industry experience, will be considered on an individual basis. Since it is possible to complete individual courses rather than enrol in the programme, all applicants should ensure that they have the prerequisite knowledge and skills for the courses they intend to read.

Programme Structure/Course of Study

The MSc. Information Technology programme consists of nine core courses – two courses of four credits each, four courses of three credits each, two courses of zero credits and a capstone project of eight credits. It also consists of three specializations, where each specialization has courses that total sixteen credits. The programme can take up to eighteen months of full-time registration to complete and up to thirty months of part-time registration. Each specialization concludes with the individual Capstone Project.

The Postgraduate Diploma in Information Technology programme has courses that total twenty-four credits. The programme can be completed in up to twelve months of full-time and up to eighteen months of part-time registration. All MSc. and Postgraduate Diploma students must complete the Starting a High-Tech Company course; while only MSc. students are required to take the Capstone Project Preparation and Capstone Project courses.

Transition

Students taking the Postgraduate Diploma in Information Technology can transition to the MSc. programme. However, approval to make the transition must be granted by the Campus Committee. Students in the MSc. Information Technology programme that do not complete their programme or wish to transition to a Postgraduate Diploma at any time, can be awarded a Postgraduate Diploma only if they have met all the requirements of the Postgraduate Diploma programme. Students in the MSc. Information Technology must complete the Capstone Project within a maximum of one year of first registration for the course, regardless of whether they are registered on a full-time or part-time basis.

Duration

Candidates in the Postgraduate Diploma in Information Technology programme can complete it in up to twelve months of full-time and up to eighteen months of part-time registration.

Candidates in the MSc. Information Technology programme can take up to eighteen months of full-time registration to complete the programme and up to thirty months of part-time registration to complete.

LIST OF COURSES

Postgraduate Diploma in Information Technology Courses

Course Code	Course Name	Credits
COMP 6323	Information Technology Project Management	4
COMP 6208	System Quality Assurance	4
COMP 6361	Cloud Computing	3
COMP 6362	Big Data Analytics	3
COMP 6363	Fundamentals of Secure Software Development	3
COMP 6364	System Administration	3
COMP 6112	Starting a High-tech Company	0
	Any one (1) available specialization course OR Mini-Capstone Project	4

MSc. Information Technology Core Courses

Course Code	Course Name	Credits
COMP 6323	Information Technology Project Management	4
COMP 6208	System Quality Assurance	4
COMP 6361	Cloud Computing	3
COMP 6362	Big Data Analytics	3
COMP 6363	Fundamentals of Secure Software Development	3
COMP 6364	System Administration	3
COMP 6112	Starting a High-tech Company	0
COMP 6514	Capstone Project Preparation	0
COMP 6511	Capstone Project	8

MSc. Information Technology Courses – Specialization in Enterprise Systems

Course Code	Course Name	Credits
COMP 6375	Enterprise Architecture Modelling	4
COMP 6370	Enterprise Information Systems	4
COMP 6380	Internet of Things for the Enterprise	4
COMP 6304	Information Security, Ethics & Legal Aspects	4

All Courses Compulsory

MSc. Information Technology Courses – Specialization in Mobile Applications

Course Code	Course Name	Credits
COMP 6107	Android Development	4
COMP 6109	iOS Development	4
COMP 6307	Mobile Communications and Security	4
COMP 6206	Interaction Design	4

All Courses Compulsory

MSc. Information Technology Courses – Specialization in Web Development

Course Code	Course Name	Credits
COMP 6115	Web Technologies	4
COMP 6325	Advanced Web Technologies	4
COMP 6211	Advanced Software Engineering	4
COMP 6370	Enterprise Information Systems	4

All Courses Compulsory

CMP MPhil/PhD Degrees

Entry Requirements

MPhil Candidates require at least an Upper-Second Class Honours degree with a strong background in the discipline into which entry is being sought. All research students must register initially for the MPhil degree but may later, with suitable progress, be upgraded to register for the PhD degree. In cases where the candidate already has an MPhil degree (or equivalent), direct entry to the PhD is possible.

Availability of Expertise and Resources

Admission is contingent upon whether candidates have a thesis proposal compatible with the expertise and resources available in the Department of Computer Science, Mathematics and Physics (CMP).

Areas of Study

Major research interests of staff members in this department are: -

Computer Science

- Optical Communication, Digital Signal Processing, Sensor Technology and Mobile Applications
- Climate Modelling, Visualisation and Mobile Applications
- Network and Computer Security, Machine Learning, and Wireless Networks
- Machine Learning and Human Computer Interaction improving accessibility and preserving heritage
- Distributed Computing with focus on High Performance Computing (including Clusters and Grid Computing), Security in ad hoc Mobile Networks
- Algorithms and Complexity, Distributed Systems and Grid Computing
- Believable Agents, Cognitive AI, AI in Games, Database Integration
- Lifestyle Technologies, Mobile Apps for Health, Health Informatics, Software Engineering, Software Quality Assurance, Software Testing. Smart Technologies and IoT.
- Frameworks and methodologies for Computer Science Education Computer-Assisted Education

- Visual Complexity Analysis, Distributed Systems, Self-stabilizing Algorithms, Applied Graph Theory
- Computers in Education, E-commerce, Computer Gaming in Education and Computer Vision

Electronics

- Embedded Microcontroller Systems
- Error-Control Coding

Mathematics

- Mathematical Diffraction Theory, Pisot Substitutions & Cut and Project Schemes
- Visible Point Sets, Lattice Substitution Systems
- Iterated Function Systems & Hausdorff Measures
- Kolakoski-Sequences
- Diagnostic Statistics in Medicine, Multiple Factor Analysis
- Estimator Theory- Special focus in Cross Validation and Cp Estimates of Prediction Error
- Bayes Inference and MCMC, Applied Machine learning- focus on supervised and unsupervised learning
- Statistical Learning - Focus on Data Mining and Applied Prediction Models,
- Penalized regression - Special focus on datasets with high attrition rates.
- Design and Analysis of Experiments, Dimension Reduction – Special focus on High Dimensional Data.
- Structural Equation Modelling, Martingales.
- Mathematical Statistics, Lasso Regression

Physics

- Electro-optical properties of Liquid Crystals and Liquid Crystal Polymer blends, Control Electronics, Improving Solar Cell efficiency
- Statistical Mechanics. Phase transitions applied to Biological systems and evolution. Analytical &

- Computational works
- Renewable Energy Technologies
- Fluid Mechanics

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil/nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Students in the MPhil and PhD degree programmes should discuss with their Supervisor suitable courses which would satisfy the credit requirements. Courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to write and present a paper to be photocopied and distributed beforehand on a topic arising out of their research, as well as to field questions put to them afterwards.

Thesis

Candidates are required to present and defend a Thesis of acceptable scope and qualify for the degree. The Thesis must follow the guidelines set out in the University's Thesis guide.

Award of the Degree

The successful completion of the required coursework, the compulsory Seminar presentations and the Thesis will lead to the award of the Degree.

LIST OF COURSES

Compulsory for All Students

FSAT 6004 Principles and Practice of Scientific Research

Available to All Students as necessary

FSAT6000 Communicating Science

FSAT 6002 Experimental Design and Analysis for Non-statisticians

Compulsory for All Students depending on their Programme

GRSM 6001 MPhil Research Seminar 1

GRSM 6002 MPhil Research Seminar 2

COMP 6000 MPhil Computer Science

ELET 6000 MPhil Electronics

MATH 6002 MPhil Mathematics

PHYS 6000 MPhil Physics

GRSM 8001 PhD Research Seminar 1

GRSM 8002 PhD Research Seminar 2

GRSM 8003 PhD Research Seminar 3

COMP 8000 PhD Computer Science

ELET 8000 PhD Electronics

MATH 8000 PhD Mathematics

PHYS 8000 PhD Physics

Research Students may also be permitted (with the approval of their Supervisor) to take courses from other offerings within the Faculty.

THE CARIBBEAN INSTITUTE FOR METEOROLOGY AND HYDROLOGY (CIMH)

CIMH MPhil/PhD Degrees

Entry Requirements

MPhil Candidates require at least an Upper-Second Class Honours degree with a strong background in the discipline into which entry is being sought. All research students must register initially for the MPhil degree but may later, with suitable progress, be upgraded to register for the PhD degree. In cases where the candidate already has an MPhil degree (or equivalent), direct entry to the PhD is possible.

Availability of Expertise and Resources

Admission is contingent upon whether candidates have a thesis proposal compatible with the expertise and resources available at the Caribbean Institute for Meteorology and Hydrology (CIMH).

Areas of Study

Major research interests of staff members in this department are: -

Meteorology

- Numerical Weather Prediction
- Aerosols and Air Quality
- Tropical Meteorology
- Hydro-meteorology
- Statistical Forecasting
- Remote Sensing
- Short and Long-term Forecasting
- Climate Variability
- Climate Change

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil/nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Students in the MPhil and PhD degree programmes should discuss with their Supervisor suitable courses which would satisfy the credit requirements. Courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to write and present a paper to be photocopied and distributed beforehand on a topic arising out of their research, as well as to field questions put to them afterwards.

Thesis

Candidates are required to present and defend a Thesis of acceptable scope and qualify for the degree. The Thesis must follow the guidelines set out in the University's Thesis guide.

Award of the Degree

The successful completion of the required coursework, the compulsory Seminar presentations and the Thesis will lead to the award of the Degree.

LIST OF COURSES

Compulsory for All Students

FSAT 6004 Principles and Practice of Scientific Research

Available to All Students as necessary

FSAT6000 Communicating Science

FSAT 6002 Experimental Design and Analysis for Non-statisticians

Compulsory for All Students depending on their Programme

GRSM 6001 MPhil Research Seminar 1

GRSM 6002 MPhil Research Seminar 2

METE 6900 MPhil Meteorology Thesis

GRSM 8001 PhD Research Seminar 1

GRSM 8002 PhD Research Seminar 2

GRSM 8003 PhD Research Seminar 3

METE 8000 PhD Meteorology Thesis

Research Students may also be permitted (with the approval of their Supervisor) to take courses from other offerings within the Faculty.

THE CENTRE FOR RESOURCE MANAGEMENT AND ENVIRONMENTAL STUDIES (CERMES)

MSc. Natural Resource and Environmental Management

Introduction

The MSc. Natural Resource and Environmental Management programme seeks to provide postgraduate students with advanced training in science and policies for sustainable use and management of natural resources in the Caribbean.

Objectives

The overall objective of the Masters programme in Natural Resource and Environmental Management is to contribute to sustainable development in the Caribbean region by training professionals in environmental and natural resource management.

Entry Requirements

A Bachelor's degree in a discipline appropriate to the MSc. with a minimum Grade Point Average of 2.5 or Lower-Second Class Honours or its equivalent is required for entry to the programme. The minimum level of the degree required may be re-assessed for candidates with extensive professional experience in an appropriate discipline.

Duration

The programme is delivered full-time in fourteen months. This includes a ten-month period for course delivery and examination, and a four-month period for the research project. Courses are taught as two to three-week modules, with examinations following the completion of each module where applicable, and course work being assessed throughout.

Programme Structure/Course of Study

The MSc. consists of seven core courses, four specialisation stream courses, and a research project.

Core courses are worth three credits each and consist of twenty-four hours of lectures and an average of twelve hours of practical work. Specialisation courses are worth four credits each and consist of thirty-six hours of lectures and an average of eighteen hours of practical work. The research project is worth eight credits.

Students must therefore obtain a total of forty-five credits as follows: twenty-one credits from core courses; sixteen credits from courses in the stream of specialisation; and eight credits from a research project. Students may be exempted from one or more core courses depending on their qualifications on entry to the programme.

Students who have chosen one stream should note that they may substitute one course from any other stream. On successful completion such students would be awarded the degree in the chosen stream.

SPECIALISATION STREAMS

Tropical Coastal and Marine Resource Management

This stream provides students with the knowledge and skills in concepts, policies, tools and techniques necessary for fishery and coastal zone management; and with a clear appreciation of the transdisciplinary approach required to be either effective fishery and coastal zone managers or effective advisors and consultants to organisations whose activities impact on the coastal zone. Emphasis will be on Caribbean case studies, with ample opportunity for practical experience.

Climate Change

This stream provides students with an understanding of the causes of climate change globally and within the Caribbean; knowledge of current climate trends and projections for the Caribbean; an appreciation of potential impacts of climate change on natural and socio-economic systems in the region; knowledge of adaptive and mitigative measures available to buffer the impacts; an understanding of the regional and international policy framework within which climate change is addressed; and with the negotiation skills required to make significant contributions at regional and international climate change

meetings and conventions.

Water Resources Management

This stream prepares graduates to address technical, social, economic and political dimensions of water resources management, especially in Small Island Developing States. The specialisation courses will cover the physical and organisational dimensions of water supply, distribution and wastewater management and the variety of issues facing water services managers. They will provide training in hydrological and hydrogeological (groundwater) analysis techniques and their application.

Land Management and Environmental Resilience

Land and its ecosystems provide products and services that are fundamental to life and its quality. For this reason, the use and management of land resources are at the heart of sustainable human development and resilience. This stream produces professionals capable of integrating sector-specific requirements for resource management into holistic, risk-sensitive land management that enhances environmental resilience and supports sustainable development. At the heart of this stream is the application of systems thinking and ecosystem approaches to address environmental resilience and sustainable development. Graduates will be equipped to work with ministries, agencies, NGOs and businesses with a focus on agriculture and food systems, disaster risk management, physical planning and land use management.

Non-Specialisation Option

CERMES has created a new option for students. This Non-Specialisation option allows students greater flexibility in choosing courses across our existing four specialisation tracks:

- Tropical Coastal and Marine Resource Management
- Climate Change
- Water Resources Management
- Land Management and Environmental Resilience

After completing the core courses, students in the non-specialisation option have the

flexibility to choose four specialisation courses from any of the above specialisation streams, taking a maximum of two courses from any single specialisation stream. Students will therefore have the flexibility to choose at least one course from each of the four specialisations to complete their degree.

This non-specialisation option was developed to allow students to combine their interests in different fields and to expand opportunities for employment and further studies. It provides students with broader knowledge and skills requisite for the complex demands of natural resources and environmental management. This option aims to produce a cadre of professionals capable of applying interdisciplinary approaches to addressing natural resources and environmental management challenges. Graduates from this non-specialisation will be able to work or continue working in various sectors of the economy, or with several development agencies in the areas of natural resources and environmental management. They will also be able to pursue further studies in several areas related to natural resources and environmental management.

The total number of credits required is the same as established for the existing specialisations (21 credits in core courses, 16 credits in specialisation courses and 8 credits in the research project).

Orientation

CERMES hosts a mandatory Orientation for all new students which commences with a Meet and Greet with staff and students within their Master's programme. The students then have a one-on-one session with the Programme Coordinator, followed by sessions on an introduction to postgraduate life, time management, study tips, use of social media as a research tool and living in Barbados.

The CERMES Senior IT Technician then takes students through the CERMES/UWI IT resources and capacity, CERMES website and other resources. They are also introduced to Moodle, Zoom and MS Teams. Orientation concludes with aquatic skills and an introduction to field/lab techniques and equipment, including the CERMES drones.

LIST OF COURSES

Core (3 credits each)

ENVT 6000 Concepts and Issues for Environmental Managers
ENVT 6001* Introduction to Environmental Planning and Management
ENVT 6002 Professional Skills for Environmental Managers
ENVT 6101 Geoinformatics for Environmental Management
ENVT 6102* Resource Economics
ENVT 6100 Environmental Impact Assessment
ENVT 6120 Measurement and Analysis in Natural Resource Management

TROPICAL COASTAL AND MARINE RESOURCE MANAGEMENT SPECIALISATION

ENVT 6122 Fisheries Biology and Management
ENVT 6126 Coastal Dynamics and Management
ENVT 6127 Ecology and Management of Coral Reef Ecosystems
ENVT 6255 Disaster Risk and Resilience in Caribbean Tourism

CLIMATE CHANGE SPECIALISATION

ENVT 6130 Climate Dynamics and Modelling
ENVT 6131 Policy Response to Climate Change
ENVT 6133 Climate Change Impacts: Mitigation and Adaptation
ENVT 6255 Disaster Risk and Resilience in Caribbean Tourism

WATER RESOURCES MANAGEMENT SPECIALISATION

ENVT 6220 Water & Wastewater Management
ENVT 6230 Water Management & the Environment
ENVT 6236 Hydro-meteorological Risks and Water Resource Management
ENVT 6238 Surface and Groundwater Hydrology

LAND MANAGEMENT AND ENVIRONMENTAL RESILIENCE SPECIALISATION

ENVT 6235* Soil and Water Conservation

ENVT 6240 Land Use and Environmental Resilience

ENVT 6245 Biodiversity and Protected Area Management

ENVT 6250 Tools for Food Systems and Environmental Analysis

ᵔ Offered blended (face-to-face & online)

* Offered Online

ˆ 4 credits each

RESEARCH PROJECT (July – October, All Students)

ENVT 6900 Research Project (8 credits)

CERMES MPhil/PhD in Natural Resource Management

Entry Requirements

MPhil Candidates require at least an Upper-Second Class Honours degree with a strong background in the discipline into which entry is being sought. All research students must register initially for the MPhil degree but may later, with suitable progress, be upgraded to register for the PhD degree. In cases where the candidate already has an MPhil degree (or equivalent), direct entry to the PhD is possible.

Availability of Expertise and Resources

Admission is contingent upon whether candidates have a thesis proposal compatible with the expertise and resources available in CERMES.

Areas of Study

Major research interests of staff members in this department are: -

- Natural Resource Governance Systems
- Coastal Zone Management and Planning
- Fisheries
- Water Resources
- Climate Change
- Land Management and Agro-environmental Sustainability
- Sustainable Energy Policy

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil/nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Students in the MPhil and PhD degree programmes should discuss with their supervisor suitable courses which would satisfy the credit requirements. Courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to present their up to date research or a research topic arising out of the candidate's research. Candidates will field questions put to them afterwards. When possible, the audience should include the candidate's supervisor and thesis supervisory committee members.

Thesis

Candidates are required to present and defend a thesis of acceptable scope and quality for the degree. The thesis must follow the guidelines set out in the University's Thesis guide.

Candidates should also determine whether the materials for the thesis, or a substantial part thereof, are available either in the Library here at Cave Hill or elsewhere locally or regionally. The candidate should also determine whether it may be necessary to travel abroad in pursuit of these objectives and how the necessary financial support to accomplish this might be obtained.

Conferment of the Degree

The successful completion of the required coursework, the compulsory seminar presentations and the thesis will lead to the award of the Degree.

LIST OF COURSES

Compulsory for All Students

FSAT 6004 Principles and Practice of Scientific Research

Available to All Students as necessary

FSAT6000 Communicating Science

FSAT 6002 Experimental Design and Analysis for Non-statisticians

Compulsory for All Students depending on their Programme

GRSM 6001 MPhil Research Seminar 1

GRSM 6002 MPhil Research Seminar 2

GRSM 8001 PhD Research Seminar 1

GRSM 8002 PhD Research Seminar 2

GRSM 8003 PhD Research Seminar 3

NARM 6000 MPhil Natural Resource Management

NARM 8000 PhD Natural Resource Management

Research students may also be permitted (with the approval of their Supervisor) to take courses from other offerings within the Faculty or externally at other Universities.

FACULTY OFFICE

MPhil/PhD in Environmental Studies

Introduction

The Faculty offers the interdisciplinary degree in Environmental Studies which can be supervised by members of any department.

Entry Requirements

MPhil Candidates require at least an Upper Second Class Honours degree with a strong background in the area in which they wish to undertake their research. All research students are normally expected to register initially for the MPhil degree but may later, with suitable progress, be upgraded to register for the PhD degree. In cases where the candidate already has an MPhil degree (or equivalent), direct entry to the PhD is possible.

Availability of Expertise and Resources

Admission is contingent upon whether candidates have a thesis proposal compatible with the expertise and resources available in any department within the Faculty.

Areas of Study

Major research interests of staff members in the Faculty are: -

- Environmental Pollution
- Energy and the Environment

- Renewable Energy Resource Assessment
- Clean Energy Technologies (including: Solar PV, Solar Thermal, Wind Energy, Marine Energy, Bioenergy, Energy Efficiency, Energy Storage, Integrated Energy Systems)
- Sectoral Energy Use (Transport, Residential, Construction, Commercial, Tourism, Water, Utilities)
- Social and Environmental Impact of Energy Sector
- Long-range Alternative Energy Planning
- Energy Economics
- Energy Policy

Programme Structure/Course of Study

Students in the MPhil and PhD degree programmes are required to successfully:

1. Complete a minimum of six credits of coursework for MPhil/nine credits of coursework for PhD,
2. Present seminars (2 for MPhil/3 for PhD), and
3. Submit a thesis.

Courses

Content courses in this programme are available through the MSc programmes available in any department of the Faculty. Students should discuss with their supervisor suitable courses which would satisfy the credit requirements. Courses should be completed in the first year.

Compulsory Seminar Presentations

For each seminar, candidates are required to write and present a paper to be photocopied and distributed beforehand on a topic arising out of their research, as well as to field questions put to them afterwards.

Thesis

Candidates are required to present and defend a thesis of acceptable scope and quality for the degree. The thesis must follow the guidelines set out in the University's Thesis guide.

Award of the Degree

The successful completion of the required coursework, the compulsory Seminar presentations and the Thesis will lead to the award of the Degree.

LIST OF COURSES

Compulsory for All Students

FSAT 6004 Principles and Practice of Scientific Research

Available to All Students as necessary

FSAT6000 Communicating Science

FSAT 6002 Experimental Design and Analysis for Non-statisticians

Compulsory for All Students depending on their Programme

GRSM 6001 MPhil Research Seminar 1

GRSM 6002 MPhil Research Seminar 2

GRSM 8001 PhD Research Seminar 1

GRSM 8002 PhD Research Seminar 2

GRSM 8003 PhD Research Seminar 3

ENVT 6990 MPhil Environmental Studies

ENVT 8000 PhD Environmental Studies

Research Students may also be permitted (with the approval of their Supervisor) to take courses from other offerings within the Faculty.

COURSE DESCRIPTIONS

Courses are listed here in alphanumeric order by Course Code – i.e. Subject Code followed by Course Number. Descriptions for all Subject codes are given in the next section.

COURSE CODE: ACCT 6010 ***(course from Faculty of Social Sciences)***

TITLE: Accounting for Managerial Decision-Making

CREDITS: 3

Description

Accounting systems provide important financial information for all types of organizations across the globe. Despite their many differences, all financial accounting systems are built on a common foundation. Economic concepts, such as assets, liabilities, and income, are used to organize information into a fairly standard set of financial statements. Management accounting systems refer to the firm's internal systems of costing products or services and their interpretation. This course provides the fundamentals for understanding financial and managerial accounting information, and the application of such information to managerial decision making. A variety of manufacturing and service industries are studied to demonstrate design of flexible cost systems to match the firm's technological, competitive and/or multinational environments. Applications to budgeting, variance analysis, pricing models, performance evaluation and incentives are demonstrated. Case discussion and analytical "what if" modes of instruction are used to enhance managerial skills of students.

Assessment

40% Coursework; 60% Final Examination

COURSE CODE: ACCT 6017 ***(course from Faculty of Social Sciences)***

TITLE: Quantitative Methods for Management

CREDITS: 3

Description

A wide range of quantitative techniques are applied to the analysis of management problems. This course will provide students with the skills to apply a wide range of quantitative techniques to a variety of management problems in the various areas of management. A critical feature of the course is the use of managerial oriented cases to focus students on the application of quantitative techniques to management problems. Particular emphasis will be placed on computer-based applications of quantitative

techniques.

Assessment

40% Coursework; 60% Final Examination

COURSE CODE: BIOC 6000

TITLE: MPhil Biochemistry

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: BIOC 8000

TITLE: PhD Biochemistry

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: BIOL 6000

TITLE: MPhil Biology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: BIOL 8000

TITLE: PhD Biology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: BISF 6000

TITLE: Introduction to Biotechnology and Molecular Biology

CREDITS: 6

Description

This course is intended to provide students with an introduction to Molecular Biology and Biotechnology. It provides general Molecular Biology concepts in Biotechnology and principles employed in producing genetically modified organisms (GMO's). New ideas and understanding of current and emerging uses of biotechnology will be explored. The programme of study includes several areas of Biotechnology, critical to understanding the creation and application of Genetically Modified Organisms. This is necessary for

practicing professionals and persons in Caribbean society to facilitate development goals in carrying out regional and international agreements such as the Cartagena protocol. In addition, Molecular Biology and Biotechnology seeks to serve regional practicing and non-practicing professions professionals in the biological sciences in the region through teaching and knowledge creation in the highly innovative field of Biotechnology which are core features of the mission of Department of Biological and Chemical Sciences, as well as the requirement of the M.Sc. programme in Biosafety.

Assessment

50% Coursework; 50% Final Examination

COURSE CODE: BISF 6001

TITLE: Biosafety, Biotechnology and the Environment

CREDITS: 6

Description

This course is intended to provide students with the necessary concepts in Ecology related to Biosafety and Biotechnology. It covers Biodiversity, Agricultural Ecology, Conservation of genetic resources and the ecology of Genetically Modified Crops. This programme of study includes several areas of basic Ecology critical to understanding the dynamic between agricultural systems and the environment. Biotechnology and Biosafety require an understanding of environmental safeguards, knowledge of basic ecological concepts, as well as the interplay between the environment and agriculture. Biodiversity safeguards are critical to sustainable development in the Caribbean. Knowledge creation is a core feature of the mission of Department of Biological and Chemical Sciences mission as well as the MSc. programme in Biosafety.

Assessment

50% Coursework; 50% Final Examination

COURSE CODE: BISF 6002

TITLE: Biosafety Risk Analysis and Risk Management

CREDITS: 6

Description

This course is intended to provide students with general risk analysis methods and risk management techniques.

It provides general concepts in biological risk assessment such as differentiation between commonly used terms in risk analysis, while allowing the student to conduct their own risk analysis and management strategies using simulated biological scenarios involving Biosafety risks. This course includes several areas of Biosafety critical to understanding and addressing responsible application of Genetically Modified Organisms in the Caribbean. This represents a key pillar in Caribbean development goals as the region implements regional and international agreements such as the Cartagena protocol. Biological risk analysis and management seeks to serve regional practicing and professionals by providing new knowledge in these rapidly changing fields of Biotechnology and Biosafety as new materials are being developed.

Assessment

50% Coursework; 50% Final Examination

COURSE CODE: BISF 6003

TITLE: Biosafety of Genetically Modified Organisms

CREDITS: 6

Description

This course covers an introduction to the theoretical aspects of managing Genetically Modified Organisms (GMO) and their derived products in agriculture and food systems. It provides the student with theories of Good Laboratory Practice and management skills in handling GMO's and their derived products. It also prepares students for the laboratory-based course, Molecular Diagnostics of GMOs/LMOS. The programme of study includes several areas of handling Genetically Modified Organisms which are necessary for practicing professionals and Caribbean society in general to engage with regional and international trade agreements which address the use of these products in modern society.

Assessment

50% Coursework; 50% Final Examination

COURSE CODE: BISF 6004

TITLE: Legal Aspects of Biosafety in Biotechnology

CREDITS: 4

Description

This is intended to provide students with current statutes relating to Biosafety and the trade of goods pertaining to the Caribbean region. It covers binding and non-binding frameworks governing international agreements, regulations, guidelines and national laws on Biosafety worldwide and in the Caribbean. The programme of study includes critical laws and regulations pertaining to the safe use and trade of genetically modified organisms which forms part of the Caribbean development goals in ratification of regional and international agreements such as the Cartagena protocol.

Assessment

50% Coursework; 50% Final Examination

COURSE CODE: BISF 6005

TITLE: Molecular Diagnostics of GMO /LMO: Laboratory Based Methods

CREDITS: 4

Description

This course covers current practical procedures for GMO detection. It includes basic PCR methods, alternative PCR methods e.g. LAMP-PCR, the use of lateral flow devices, ELIZA and an introduction to the use of analytical methods for GMO detection. It also provides students with the necessary skills to test for GMOs in their home territories using any of these methods and the ability to interpret data provided by these methods. Students will also be provided with a list of Diagnostic Service providers for GMO detection. This practical programme of study includes carrying out experimental procedures with Genetically of Modified Organisms in the lab which is a tenet of the mission of the University to be innovative and create new knowledge by using the latest biotechnology procedures for GMO detection. This is a critical skill which needs to be created in the region among practicing professionals to effectively engage with Regional and International trade agreements which address the use of these products in modern society.

Assessment

100% Coursework

COURSE CODE: BISF 6900

TITLE: Biosafety Research Project

CREDITS: 9

Description

A research project is a fundamental component of the M.Sc. programme and this is reflected not only in the credit rating, but by the fact that the M.Sc. project runs for 5 months so that the student may have the necessary time to complete the project to a high standard.

Students will come to the Course Coordinator during the second semester of the M.Sc. with potential ideas for their research project. A list of potential projects will also be made available for those students who do not have a specific topic in mind at the beginning of the second semester. During the second semester the student and the Course Coordinator will communicate face-to-face or online three times to further develop the research project idea, develop clear aims and objectives and identify second supervisors. The research project may cover any feasible aspect of Biosafety and Biotechnology or any applied issue in the subject area. It may involve field or laboratory-based work orunderpin studies being undertaken by staff within UWI, or it may address an issue related to a student's employer. For students outside of Barbados, the project may be undertakenin the student's home territory with approval from the Course Coordinator.

Assessment

100% Coursework

COURSE CODE: CHEM 6000

TITLE: MPhil Chemistry

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: CHEM 8000

TITLE: PhD Chemistry

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: COMP 6102

TITLE: An introduction to e-Business

CREDITS: 4

Description

E-Business which encompasses e-commerce is a new and important vehicle for conducting business in the global economy. Using this method, a business can market and sell its products and services online; exchange business information; or cut cost through the automation of business processes and the optimisation of value chains. This course introduces the student to e-business through an analysis of the barriers to e-business, revenue and business models, e-business strategies and payment systems; as well as, the planning and construction of e-business solutions.

At the end of this course, students will be able to:

- Explain the Foundations of e-Business
- Explain how business processes are managed
- Summarise the issues related to migrating from a brick-and-mortar organization to an e-based organisation.
- Summarise e-business related legislation and tax laws in the Caribbean
- Distinguish between m-Commerce and e-Commerce
- Distinguish between the categories of e-commerce, e-business, and e-government.
- Analyse e-Business strategies
- Analyse the barriers to e-Business in developing countries (including the Caribbean) through case studies and academic literature

- Analyse revenue and business models
- Compare and contrast the technologies comprising the Internet and the World-wide web
- Compare and contrast traditional payment, e-payment and m-payment systems
- Design simple Web interfaces using best practices
- Plan an e-Business solution based on business requirements and strategies
- Create an e-business website using a content management system

Asessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP 6107

TITLE: Android Development

CREDITS: 4

Description

The course will present students with a comprehensive overview of Android programming concepts and the best practices for Android mobile application development. Students will learn how to use object-oriented analysis and design (OOAD) concepts, design patterns and architectural strategies to create mobile applications for the evolving Android market. Students pursuing careers in mobile application development, IT management or IT consulting will benefit from this course. This course will be delivered using a combination of interactive lectures, online and face-to-face discussions and laboratories.

At the end of this course, students will be able to:

- Describe the process of system development for the Android OS
- Differentiate among the android development environments
- Identify the components of an Android development kit
- Effectively use an Android development kit
- Design an Android application using object-oriented analysis and design (OOAD) methods
- Evaluate enterprise-level architectural strategies, e.g. MVC in the development of android applications
- Evaluate the performance of Android applications.
- Create an Android application using new and emerging features of Androiddevices.

Asessment

This course will be assessed by 100% Coursework weighted as follows:

- In-course Test(s); Online Discussions; Theoretical and/or Practical Assignment(s):40%
- Project(s): 60%

COURSE CODE: COMP 6109

TITLE: iOS Development

CREDITS: 6

Description

Apple mobile devices such as the iPhone, iPod Touch and iPad, have gained wide popularity in recent times and have also provided a rich opportunity for program developers to develop applications for these devices. The aim of this course is therefore to provide the student with all the fundamental tools required to develop applications for those devices and then to immerse the student into an application development environment. The course will address issues ranging from generic good design and programming principles, to specific Objective C and Cocoa Touch programming patterns, tips and tricks, along with Apple's guidelines for application development and design.

At the end of this course, students will be able to:

- Describe the overall iPhone OS programming steps
- Explain the key software features provided by the iPhone OS
- Explain the principles of the Model View Controller design pattern
- Write Objective-C and Cocoa Touch applications
- Demonstrate the utility of the XCode development environment on the Macintosh
- Demonstrate skills in using the iPhone SDK software interfaces
- Demonstrate the principles behind location awareness
- Demonstrate an understanding of the multi-touch interface model
- Analyse the performance implications of developing applications on a constrained device
- Debug, profile and optimize applications
- Design the interface of a mobile application that conforms to Apple's Human Interface Guidelines
- Create multimedia and mobile applications for the iPhone, iPod Touch and iPad

Assessment

100% Coursework

COURSE CODE: COMP 6112

TITLE: Starting a High-tech Company

CREDITS: 0

Description

The skills required to start an e-business are wide and varied and includes technology, legal, financial and management issues. This course provides students with a practical introduction to the process of starting an e-business.

At the end of this course students will be able to:

- Discuss methods of marketing and branding a business
- Discuss capital sources
- Discuss launch strategies
- Explain the need for a business plan
- Explain how to move brick-and-mortar organisations online
- Identify the accounting and legal requirements of a business
- Identify risks and uncertainty
- Select a revenue/business model
- Analyse the components of a business plan
- Monitor a running business
- Evaluate an idea and find a niche market

Assessment

Pass / Fail on satisfactory attendance

COURSE CODE: COMP6115

TITLE: Web Technologies

CREDITS: 4

Description

A full appreciation of web technologies is essential when building e-Commerce/e-Business initiatives. Knowledge of these technologies ensures that the Web programmer builds the most effective solution for the given business. In this course students will be introduced to the technologies required to build dynamic web site for small and medium-size e-commerce/e-business initiatives.

By the end of this course students will be able to:

- Summarise the phases in the system workflow model
- Use Web tools and ecommerce applications in the construction of e-commerce/e-business web sites
- Apply OOD/P concepts to design and implement e-business solutions
- Evaluate a dynamic website
- Justify the use of web technologies for given projects
- Design an e-commerce/e-business solution
- Construct and query a normalised database
- Construct a dynamic web site

Assessment

100% Coursework

COURSE CODE: COMP 6124

TITLE: An Introduction to Technology Entrepreneurship

CREDITS: 4

Description

The commercialisation of technologies (COT) by technology-based entrepreneurs serves the dual role of knowledge creation and economic development. This COT process fuels the economies of many developed countries. This is a compelling reason for small developing economies to want to understand and study this process so that they can diversify their economies and generate wealth. This course introduces students to the concept of technology entrepreneurship through a study of entrepreneurs who commercialised high-technology products. It explains why poor developing countries

consider the COT so important and exposes students to the process of creating a new venture, different types of ventures, and the models, theories, instruments and mechanisms of technology entrepreneurs. This course also introduces students to fundamental financial and management principles needed for technology-based entrepreneurs.

At the end of this course students will be able to:

- Define technology entrepreneurship
- Explain the meaning of the "valley of death" in COT
- Explain the process of creating a new venture
- Examine the role and importance of technology entrepreneurship to society
- Distinguish between entrepreneurship and technology entrepreneurship
- Analyse models, theories, instruments and mechanisms of technology entrepreneurship
- Create value propositions
- Evaluate and critique the successes and failures of technology-based entrepreneurs

Assessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP 6126

TITLE: New Product Development and Intellectual Property Protection

CREDITS: 4

Description

The process of developing new technology products is a key part of the entrepreneurial process. Understanding how to protect these product ideas will make the difference between successful and unsuccessful ventures. In this course students will learn how to create product ideas from available technologies which are appropriate for the researched markets (T-P-M linkages). The result of this process will be a prioritised list of product ideas from which value propositions can be developed. Students will also learn how to protect the generated intellectual property.

At the end of this course students will be able to:

- Define venture objectives
- Define and research the opportunity space

- Discuss the consequences of software piracy
- Explain how patent and copyright laws may vary in different jurisdictions
- List available (developed, owned or licensed) technologies
- Use online tools to perform patent searches
- Distinguish among patent, copyright, and trade secret protection
- Develop Technology-Product-Market linkages
- Prepare a patent application for an invention
- Formulate an intellectual property strategy for an invention
- Create value propositions
- Create, evaluate and prioritise product ideas

Assessment

100% Coursework

COURSE CODE: COMP 6156

TITLE: Machine Leaning Applications

CREDITS: 4

Description

This course explores the core principles and key applications of machine learning. It facilitates an in-depth understanding of a variety of machine learning techniques that can be applied when analysing big data including regression, classification, tree-based methods, ensemble learning, support vector machines, clustering, and neural networks. In addition, it teaches how to match suitable machine learning techniques and solutions to specific problems.

At the end of this course students will be able to:

- Demonstrate insight into the various applications of machine learning by identifying solutions to different problem sets.
- Discuss the fundamental principles of machine learning and the flow of the machine learning pipeline.
- Apply various machine learning techniques to various types of data.
- Implement supervised machine learning technique to predict a continuous variable (response or target) from a set of other variables (features or predictors).
- Implement classification as a supervised machine learning technique to predict binary (or discrete) response variables from a set of features.

- Implement tree-based methods and ensemble learning methods.
- Implement neural networks applications.
- Describe how neural networks can be used within different contexts..

Assessment

This course will be assessed by 100% coursework weighted as follows:

- In-course test(s) and/or lab exercises: 20%
- Case study analysis and/or case report(s); online discussions and/or class participation: 20%
- Group and/or individual project(s): 60%

COURSE CODE: COMP 6160

TITLE: Introduction to Block Chain

CREDITS: 4

Description

This course will expose students to a variety of topics within the blockchain technology space. A major objective of this course will be to facilitate students' acquisition of foundational knowledge of blockchain technology, and to encourage the ideation of applications through the use of cases of the technology. Several business cases will be used to expose students to a variety of situations involving blockchain technology applications developed by start-ups, as well use cases leveraged by established firms in various industries. Although the course focuses on companies within industries that are involved in the blockchain space, the topics explored encompass all business problems that can be solved by the technology. The fundamentals of case analysis (e.g. financial analysis, managerial accounting principles, and strategic analysis) will be emphasized in analysing cases.

At the end of this course students will be able to:

- Identify and explain the major components of a blockchain
- Discuss the differences between the most common implementations of blockchain-based systems
- Explain the properties of a blockchain and the types of business problems those properties are used to solve
- Describe the properties of a currency
- Identify the features of blockchain technology that allow crypto currencies to exist
- Evaluate blockchain infrastructure mechanisms

- Analyse public and private blockchains use in solving problems
- Critique blockchain adoption and deployment strategies.

Assessment

This course will be assessed by 100% coursework weighted as follows:

- In-course quizzes and/or tests (both formative and summative): 20%
- Theoretical and/or practical assignments (summative): 15%
- Online discussions (formative): 5%
- Project(s) (summative): 60%

COURSE CODE: COMP6161

TITLE: Applied Blockchain

CREDITS: 4

Description

In this course students will become familiar with the process of blockchain smart contract development using the Ethereum blockchain. They will learn the Solidity language and the various tools associated with Solidity development, deployment and testing.

- Remix and EthFiddle for interactive software development
- Truffle for deployment and testing
- Etherscan to view the state change results

The course will also introduce the concept of a decentralized application (dApp) and students will learn dApp development using open source tools that include:

- Node.js and Sails.js for server-side development
- Vue.js for browser UI development
- Web3.js RPC library for connecting to Ethereum nodes.

At the end of this course, students will be able to:

- Describe the process and flow for developing professional decentralizedapplications
- Evaluate a public blockchain as an architectural choice for solving businessapplication problems
- Integrate Ethereum smart contracts with a full stack application
- Develop smart contracts
- Build a distributed application (dApp).

Assessment

100% Coursework

COURSE CODE: COMP 6206

TITLE: Interaction Design

CREDITS: 4

Description

With the rapid rise of consumer-oriented software and devices in both the consumer and enterprise markets, the importance of careful user interface design in the software development process has become paramount. In fact, usability has become one of the key success factors of any computer software. This course introduces students to the process of user interface or interaction design. The course aims to provide students with the skills and knowledge necessary for the successful design, evaluation and implementation of usable user interfaces on a range of devices and contexts.

At the end of this course students will be able to:

- Describe the goals of interaction design.
- Explain the concept and role of the design stage.
- Explain the concept and role of the evaluation stage.
- Explain the concept and role of the implementation stage.
- Select and apply tools for interface design, implementation and evaluation.
- Select and use appropriate interaction devices (both input and output).
- Use appropriate interface modalities such as sound, colour and menus.
- Apply fundamental interaction design techniques in the design, implementation and evaluation of interfaces.
- Apply appropriate design techniques for the given devices - mobile versus desktop devices, touch versus mouse-based devices.
- Apply appropriate design techniques for the given contexts - web-based versus desktopapplications versus mobile applications.
- Create user interfaces using the appropriate design, implementation and evaluation methods and tools.

Assessment

100% Coursework

COURSE CODE: COMP 6208

TITLE: System Quality Assurance

CREDITS: 4

Description

This course focuses on software system quality assurance and its relevant metrics as an important part of the development of games, mobile applications and web applications. The reviewed techniques span the software development phases from requirements through delivery and maintenance. On completing this course, students will learn how to determine appropriate quality goals and relevant metrics. They will understand how to select, plan, and execute quality assurance activities throughout system development and evolution to predictably meet quality and schedule goals. They will learn how quality assurance can be incorporated into process improvement planning to increase the ability of an organization to cost-effectively prevent and identify defects in games, mobile applications and web applications.

At the end of this course students will be able to:

- Describe system quality philosophies, principles, methods, tools, standards as well as the fundamental concepts related to verification and validation processes
- Describe the fundamental problems and risks associated with various technology development methodologies
- List examples of techniques for product release and defect archiving
- Select and define product/process metrics and analytical techniques
- Demonstrate how and when to perform technology audits
- Apply product/process metrics and analytical techniques
- Evaluate the impact of software system quality management principles on business objectives for games and mobile applications
- Design and implement technology quality programs
- Create and evaluate test plans, execution documents and test strategies
- Create automated tests for games and mobile applications
- Create tests for complicated programming logic

Assessment

100% Coursework

COURSE CODE: COMP 6211

TITLE: Advanced Software Engineering

CREDITS: 4

PRE-REQUISITES(S): COMP2145 Software Engineering or Equivalent

Description

This course aims to further develop students understanding of the concepts and methods required for the construction of large software intensive systems. It aims to develop a broad understanding of the discipline of software engineering. It seeks to complement a familiarity with analysis and design with knowledge of the full range of techniques and processes associated with the development of complex software intensive systems. It aims to set these in an appropriate engineering and management context.

At the end of this course, students will be able to:

- Explain the issues affecting the organisation, planning and control of software-based systems development
- Identify tools that can be used to plan and run a project
- Analyse business requirements
- Write requirements, specifications and testing documentation
- Plan and run a small software intensive system development project

Assessment

100% Coursework

COURSE CODE: COMP 6222

TITLE: Business Opportunity Development

CREDITS: 4

Description

Business plans are tools used by entrepreneurs to evaluate the viability of business opportunities and record their goals and objectives. Although having a business plan does not guarantee business success, not having one makes success less likely. This course teaches students how to identify and evaluate potential business opportunities, as well as evaluate and create business plans for high-technology ventures. By the end of the course the student, as a part of a group, will have created a business plan for a new venture.

At the end of this course students will be able to:

- Discuss the purpose and benefits of a business plan
- Identify and evaluate business opportunities
- Identify the essential components of a business plan
- Appraise and interpret financial statements in business plans
- Create a business plan for a high-technology venture
- Evaluate and critique a business plan

Asessment

100% Coursework

COURSE CODE: COMP 6224

TITLE: Business Leadership for Technology Entrepreneurs

CREDITS: 4

Description

The course provides students with the opportunity to:

- Develop a range of skills to enable them to relate to, connect with and influence people and other entities within - and associated with - the technology start-up.
- Develop the business acumen necessary to maximize the likelihood of success in an entrepreneurial environment.
- Develop an awareness of social entrepreneurship and corporate social responsibility bychallenging students to become champions for socially responsible businesses to build our evolving societies.

On completing this course, students will be able to forge and maintain strong working relationships with everyone involved in their technology start-up in order to move the business forward with the best technology expertise, have an understanding of the goals of their start-up and adopt a targeted approach to the overall competitive landscape.

At the end of this course student will be able to:

- Identify the appeals that are most persuasive when going out to influence others.
- Identify recent trends in social entrepreneurship and corporate social responsibility.
- Explain the implications of social entrepreneurship and corporate social responsibility for technology business that is for and not for-profit.
- Explain personal orientations when leading, influencing and interacting with others.
- Explain how organizational systems and conventionally used management paradigms

lead to misguided behaviour in technology organizations.

- Explain the social impact and economic sustainability of technology business.
- Explain what persons do and why they do it when in a less effective mode - thus reflecting on their style in a targeted manner to examine the origins of that style.
- Choose positive actions that result in an effective technology business.
- Use the Mind-Set Management perspective to describe what takes place in work environments by demonstrating an understanding of the Culbert and McDonough viewof human nature, personal style, and how people think and operate when working withothers.
- Demonstrate effectiveness in technology-based entrepreneurial scenarios through theimplementation of practical knowledge of leadership strategies.
- Demonstrate effectiveness in entrepreneurial scenarios through the implementation of practical knowledge of strategies for turning strong social ideas into viable ventures.

Assessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP 6304

TITLE: Information Security, Ethics and Legal Aspects

CREDITS: 4

Description

In today's electronic environment, security of assets is becoming increasingly important as businesses and consumers become more dependent on complex systems that span multiple companies and countries. This course introduces students to theoretical and practical aspects of information security, ethics and legal aspects as it relates to data and information in organisations. The course aims to provide students with the skills and knowledge necessary for the planning and implementation of policies and procedures for the security of an organization's information assets.

At the end of this course students will be able to:

- Explain the concept and role of information technology monitoring.
- Explain the concepts of identity theft, phishing, content filtering, encryption and firewalls.
- Identify and explain the difference between authorization and authentication.
- Categorize security threats to e-Business.

- Distinguish ethical from legal issues as they relate to information within the organization.
- Distinguish information security policies from information security plans.
- Evaluate different monitoring technologies.
- Evaluate the security of an e-commerce/e-business website, a game or a mobile application.
- Create ePolicies that address ethical use of information and devices in the business environment.
- Create an information security plan.

Assessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP 6307

TITLE: Mobile Communications and Security

CREDITS: 4

Description

The ubiquitous nature of mobile devices has revolutionized communication within societies on a global scale. Consequently, there are now new avenues via which users can both access and distribute content. However, while these devices provide for the comfort and convenience of the user, threats related to the security of data and applications are a major concern. In this module students will be exposed to the fundamentals of wireless signal transmission, medium access control and mobile networks. Additionally, the basic techniques of security, attacks and protection in mobile communication networks will also be examined. Students will be able to assess the security vulnerabilities of a mobile system and design or adapt protocols to mitigate these vulnerabilities.

At the end of this course students will be able to:

- Describe the fundamentals concepts of mobile communication systems
- Describe the technologies and protocols involved in mobile communication
- Describe the infrastructure required for and m-communication.
- Explain the structure, design, and functionality of each of the major existing cellular networks: GSM, IS-95, and 3G networks
- Discuss the security vulnerabilities of a mobile system.
- Discuss the various protocols used to mitigate security vulnerabilities in mobile

systems

- Analyse a mobile system to determine the vulnerabilities and to provide appropriate solutions
- Advise on the latest developments and directions of research in modern cellular networks.

Assessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP6321

TITLE: Technology Entrepreneurship and New Venture Management

CREDITS: 4

Description

Entrepreneurship requires the transforming of ideas into opportunities using a structured process. This intense course utilises case studies to explore the essential elements of the entrepreneurial process. The course will address the issues of: What is an entrepreneur, how to develop business models, how to secure financial resources, how to manage a growing venture and corporate entrepreneurship.

At the end of this course students will be able to:

- Identify and secure capital
- Identify and manage uncertainty
- Monitor a growing venture
- Judge whether an individual is an entrepreneur
- Develop business models for a new venture

Assessment

Pass/Fail on satisfactory attendance

COURSE CODE: COMP 6323

TITLE: Information Technology Project Management

CREDITS: 4

Description

This course teaches students about the roles and responsibilities of a technology project

manager as well as fundamental and best practice management techniques for technology project management. The course assumes no prior knowledge in management techniques and is intended to teach students how to develop approaches and styles of management specific to technology projects. The course assumes a basic understanding of software development and the software development life cycle and uses this basis to teach the student how to deliver technology projects on time, within budget, and to specifications.

On completing this course student will have the practical skills required to: start a technology project with a clearly defined scope, set and managestakeholder expectations, manage changing client requirements, and meeting quality standards. The student will also be able to identify and overcome the typical pitfalls of technology projects.

At the end of this course, students will be able to:

- Identify the communication mechanisms for different audiences, and how to work withlocal and remote teams.
- Identify the unique risks, issues, and critical success factors associated with technology projects.
- Describe measurement theory for the management of technology projects and how tocommunicate the results.
- Differentiate between the project management of technology initiatives from other kinds of projects, including hardware, technology and vendor relationships.
- Apply project management principles and techniques as they relate to technology project planning, implementation and tracking.
- Demonstrate the use of technology project management philosophies, principles, methods, tools, and standards
- Demonstrate the use of various techniques for managing a technology development team.
- Apply the appropriate product and process metrics and analytical techniques to a project
- Apply the project life cycle to an information technology project
- Infer the optimal time for product release.
- Create a project management plan

Assessment

100% Coursework

COURSE CODE: COMP6325

TITLE: Advanced Web Technologies

CREDITS: 4

PRE-REQUISITES: COMP6115 Web Technologies

Description

Due to the increasing popularity of the Internet many organisations have not only created web sites to market their businesses but have also begun to web enabled their applications. Since these web applications are needed for the enterprise, they must be easy to scale and secure. To simplify this process a number of vendors have designed and released enterprise-scale web-based frameworks. This course begins by comparing and contrasting two popular enterprise-scale web-based applications. It teaches students how to design, build and test components, and integrate them into the framework. Students also learn how to create, publish and consume web services.

At the end of this course, students will be able to:

- Define “enterprise-scale web-based application”
- Select an enterprise-scale web-based application framework based on application type
- Compare and contrast enterprise-scale web-based frameworks
- Design an enterprise-scale web-based application
- Test and create enterprise-scale web-based applications
- Create a web service

Assessment

100% Coursework

COURSE CODE: COMP 6361

TITLE: Cloud Computing

CREDITS: 3

Description

The course exposes students to the important concepts, technologies and architectures that form the cloud computing paradigm. Topics that will be covered in this course include: Fundamental concepts and models, cloud enabling technology, cloud infrastructure mechanisms, cloud security mechanisms, cost metrics and pricing models and service quality metrics and SLAs. Students who are pursuing careers as application developers, web developers, or system administrators; or those desirous of fostering a clear understanding of cloud computing, as well as the ability to clearly articulate the business case for cloud computing will benefit from this course. The delivery mechanisms used for this course include face-to-face lectures, online and in-class discussions, class presentations and hands-on labs.

At the end of this course, students will be able to:

- Define cloud computing
- Describe the fundamental concepts, models and enabling technologies of cloud computing
- Express the fundamental characteristics of cloud security
- Give examples of cloud computing architectures
- Design a cloud computing solution
- Develop a cloud computing solution
- Recommend cloud computing architectures for organizational use
- Summarize delivery and pricing models, service quality metrics and SLAs
- Evaluate cloud infrastructure mechanisms
- Critique cloud computing adoption and deployment strategies

Assessment

100% Coursework

COURSE CODE: COMP 6362

TITLE: Big Data Analytics

CREDITS: 3

Description

This course examines the theoretical and practical techniques used in the analysis of large data sets. It covers data collection, data pre-processing, predictive, prescriptive and descriptive analytics as well as social network analytics. The course will facilitate discussion of case studies that involve big data analytics including fraud detection, web analytics and recommender systems. This course targets students who intend to pursue careers as data scientists work in the field of data analytics. Due to the data and technology intensive nature of the material, this course will be delivered primarily through face-to-face instruction and hands-on lab sessions.

At the end of this course, students will be able to:

- Describe the analytics process model
- Identify the requirements of the analytical model
- Explain the nomenclature used in data analytics
- Prepare data for pre-processing and collection
- Produce cleaned data to be used for analysis
- Analyse large data sets using different techniques
- Recommend data collection and analytical approaches to use based on project requirements

Assessment

100% Coursework

COURSE CODE: COMP6363

TITLE: Fundamentals of Secure Software Development

CREDITS: 3

Description

This course equips students with the knowledge and skills needed to build software that is difficult to exploit. It covers the technical aspects of secure coding with additional focus on the software design process to ensure that security is part and parcel of the design rather than an afterthought.

Topics covered in this course include: an introduction to cryptography; understanding current and emerging threats; securing the network, operating system and database environments; vulnerability mapping and incorporating security into the software development process. This course is a prerequisite for students who are desirous of becoming IT security consultants, secure software developers or IT security auditors. Face-to-face lecturers, online presentations, hands-on lab sessions, and in-class discussions will be used in the delivery of the course material.

At the end of this course, students will be able to:

- Identify threats to the software, network, operating system and database environments
- Identify mitigation techniques
- Identify how security affects the software design process
- Apply common techniques for improving system security
- Apply disaster and recovery techniques to operating systems
- Apply a security approach to database management
- Analyse weaknesses in existing systems
- Design an investigation into the programming languages used in the system
- Develop a secure system
- Evaluate the elements of the requirements document that assert security.

Assessment

100% Coursework

COURSE CODE: COMP6364

TITLE: System Administration

CREDITS: 3

Description

This course equips students with the knowledge and skills needed to manage the technological infrastructure of a small IT environment that supports 100-500 employees. Topics to be covered include architectures, heterogeneous systems, authentication and security, network services including firewalls, storage services, performance analysis and tuning, management and configuration of services and system resources, system initialization, drivers, cross-platform services, policies and procedures. Students pursuing careers in system administration, network administration or software development; or those who desire deeper knowledge of how to manage the systems that are the

foundation of all IT organizations will find this course beneficial. The course is very practical in nature and will be delivered by face-to-face instruction in the form of lectures and lab sessions. Some aspects of the course will be delivered online and through in-class discussions.

At the end of this course, students will be able to:

- Describe the role of the system administrator
- Explain the organization of IT systems
- Apply techniques to interoperate computer systems comprised of Linux andWindows machines
- Manage effectively users, files, and software on a computer system installation consisting of clients and servers
- Install and configure networking services for intranet and Internet domains
- Demonstrate the installation and configuration of Linux and Windows virtual machines
- Analyse network security policies in Linux and Windows environments
- Develop scripting mechanisms and automated scripts for performing complicated administration tasks
- Evaluate alternative policies and mechanisms for providing reliability features of computer system services and operations
- Design and deploy systems to manage large amounts of data for a wide variety of users in a small to medium-sized business IT infrastructure.

Assessment

100% Coursework

COURSE CODE: COMP 6370

TITLE: Enterprise Information Systems

CREDITS: 4

Description

This course presents an overview of all aspects on information systems in the enterprise. Topics to be covered include: Managing in a digital world, managing information system infrastructures, gaining the competitive edge using information systems; developing information systems and using big data and analytics.

This course is for students who want a strong foundation in developing IT systems as well

as the ability to clearly articulate the business case for its adoption. It is also for students seeking a career path in application development, IT management, project management, software testing and security. The course will be delivered using face-to-face lectures, online and in-class discussions, class presentations and hands-on labs.

At the end of this course, students will be able to:

- Describe information systems and the business models that leverage information systems
- Explain the issues associated with managing information systems in a highly connected world including ethics of data collection and dissemination
- Illustrate how to gain competitive advantage using information systems
- Analyse the issues associated with information systems management
- Design a business-to-consumer e-Commerce solution
- Design an organisational solution using social media
- Design a business intelligence solution using big data and analytics
- Evaluate business processes
- Evaluate the security of information systems
- Recommend whether to develop or acquire an information system.

Assessment

100% Coursework

COURSE CODE: COMP 6375

TITLE: Enterprise Architecture Modelling

CREDITS: 4

Description

This course equips students with the knowledge, tools and techniques used in modelling enterprise systems. It will cover topics that include: an introduction to enterprise architecture; governance instruments; architecture methods and frameworks;description languages like BPMN and UML; enterprise modelling; viewpoint design and visualization; architecture analysis and alignment.

This course targets students pursuing careers in IT as developers, architects, project/team leaders, project managers, IT managers or IT consultants. Students currently holding, occupying, or who aspire to undertake team lead, architect or management positions will

immediately benefit from this course. Course delivery will be realised through face-to-face interactive lectures, online and in-class discussions and hands-on lab sessions.

At the end of this course, students will be able to:

- Describe the enterprise architecture process
- Explain the internal and external drivers for enterprise architecture
- Apply different frameworks and description languages to an architecture model
- Apply different communication strategies to facilitate architecture modelling
- Distinguish among the different governance instruments used in enterprise architecture modelling
- Construct an enterprise architectural model based on the guidelines
- Compose viewpoints of an architecture
- Analyse an existing enterprise architecture
- Critique case studies of enterprise architecture models and make recommendations for improvement.

Assessment

70% Coursework; 30% Final Examination

COURSE CODE: COMP 6380

TITLE: Internet of Things for the Enterprise

CREDITS: 4

Description

This course provides an overview of the Internet of Things (IoT) and how to deploy the technologies in an organization. Topics to be covered include: The IoT stack, IoT applications, and implementing IoT open source solutions. This course is designed for students who desire knowledge of the cutting-edge field of IoT and how it can be meaningfully used by organizations.

Students who need a strong foundation in developing IT systems as application developers, as well as those who wish to develop the ability to clearly articulate the business case for 10T adoption as IT managers, will benefit from this course. The delivery mechanisms used for this course include face-to-face lectures, online and in-class discussions, class presentations and hands-on labs.

At the end of this course, students will be able to:

- Describe the components that comprise a typical Internet of Things (IoT) stack
- Explain the issues associated with IoT including data management and security
- Illustrate how to use IoT to gain the competitive advantage
- Design IoT solutions
- Implement an IoT solution using commercial and open source stacks
- Evaluate business processes for IoT modification
- Evaluate the security of IoT implementations
- Recommend whether to adopt IoT for specific organisational goals.

Assessment

100% Coursework

COURSE CODE: COMP 6510

TITLE: Mini Capstone Project

CREDITS: 4

PRE-REQUISITES: Completion of all taught courses required for Diploma programme

Description

The mini capstone project is a shorter version of the capstone project created specifically for diploma students who are undertaken a programme of shorter duration. The mini capstone project inherits all the characteristics of the capstone project but will be completed in the shorter time of three months.

At the end of this course students will be able to:

- Identify a project idea
- Investigate the background materials required to start the project
- Write a report/research paper documenting the project
- Create a solution/model/framework for the project
- Identify and evaluate different technological solutions for the project
- Justify the selected solution
- Evaluate the solution

Assessment

100% Coursework

COURSE CODE: COMP 6511

TITLE: Capstone Project

CREDITS: 8

PRE-REQUISITE(S): Completion of all taught courses required for MSc programme

Description

At the end of the taught component of an MSc. degree, it is necessary for students to consolidate their knowledge and demonstrate their mastery of the taught materials. The capstone project is one way for students to consolidate this knowledge by allowing them to pursue research or project in their area of specialisation. The capstone project is a substantive project lasting for six-month. In this course students will undertake a project either a) for an organisation, b) based on a research topic, or c) identified by the student(s) individually or in collaboration with a supervisor(s).

This project will require the student(s) to a) build an application and report on it, or b) conduct a piece of research and write a research paper, for example create and evaluate/prove a theoretical model/framework or complete a substantive research study. Students may or may not pursue the commercialisation of their projects. In addition, students pursuing a research project are required to complete the Kick-Starting your Research workshop. The capstone project may be completed individually or as part of a group. Working as a part of a group is strongly encouraged since it develops group collaboration skills and allows more to be accomplished.

Assessment

100% Coursework

COURSE CODE: COMP 6514

TITLE: Capstone Project Preparation

CREDITS: 0

Description

This course provides guidance and feedback to students as they work on various aspects of the capstone or mini capstone research project. Course topics will include: Creating a research timeline (or work breakdown structure), clarifying a research problem or business idea; identifying/ defining methodologies; creating a research plan. This course is imperative for students in the Master's programme because it will help them complete

their research project within the allotted timeframe. The skills developed will benefit students who are pursuing careers in IT management; or who will become team leaders in a technological development environment.

At the end of this course students will be able to:

- Define a research question
- Give examples of properly scoped research projects
- Create milestones for completing a research project
- Evaluate research and/or development methodologies
- Apply the correct methodology to their research or development problem
- Create a draft research plan
- Present their research plan and progress reports

Assessment

100% Coursework

COURSE CODE: COMP 6520

TITLE: Research Paper

CREDITS: 20

PRE-REQUISITE: Completion of all taught courses required for programme

Description

The research paper results from a substantive research project. The duration of the research project is 15 months; during this period, students will be required to complete two public seminars.

Assessment

100% Coursework

COURSE CODE: COMP 6000

TITLE: MPhil Computer Science

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: COMP 8000

TITLE: PhD Computer Science

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ECOL 6000

TITLE: MPhil Ecology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ECOL 8000

TITLE: PhD Ecology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ELET6000

TITLE: MPhil Electronics

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ELET 8000

TITLE: PhD Electronics

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ENVT 6000

TITLE: Concepts and Issues for Environmental Managers

CREDITS: 3

Description

Environmental and natural resources managers address complex issues of sustainable development from the local to global level. This introductory course provides an overview of the key concepts and fundamental issues with which environmental managers should be familiar. In doing so, it covers topics, some of which are addressed in greater detail in specialisation streams and others that may not be encountered again, so that all students acquire a broad and integrating interdisciplinary perspective. It encourages participants to examine and explore subjects of interest to them within broad topic headings that include systems thinking, governance, environmental instruments, poverty, gender, sustainable livelihoods, global goals and assessments, blue and green economies, research communication, project management and more. The line-up of topics changes each year to keep current. Students have the opportunity to choose a topic as a special session.

Assessment

100% Coursework

COURSE CODE: ENVT 6001

TITLE: Introduction to Environmental Planning and Management

CREDITS: 3

Description

This course covers a wide range of areas including perspectives on environmental management and planning; international and regional agreements; arrangements for environmental planning, policy design, implementation and evaluation; and people-centered practices in planning and management. Persons with backgrounds in natural science, social science and other disciplines will find it relevant to their education and experience. It is online, interdisciplinary and prepares participants for a variety of careers related to the environment. Many of the specialisation courses build upon this. Students exchange information and experience on what it is like to be a participant in a planning

process and what improvements they would envisage making, if they became planners and managers. It is a very interactive course, making full use of the online discussion forum and a variety of media resources.

Assessment

100% Coursework

COURSE CODE: ENVT 6002

TITLE: Professional Skills for Environmental Management

CREDITS: 3

Description

This course equips students with a portfolio of skills that will allow them to present themselves, and to conduct and present their work, in a professional manner. It starts by addressing fundamental issues of verbal and non-verbal communication geared at enhancing the students' ability to share information in a range of settings. The improvement of writing skills and the delivery of professional and persuasive presentations are all covered in this course. It provides students with knowledge and skills required to prepare literature reviews. There is also an introduction to word processing and presentation. In addition, the course will provide a basic introduction to group dynamics to facilitate students' ability to function effectively in team settings.

Assessment

100% Coursework

COURSE CODE: ENVT 6100

TITLE: Environmental impact Assessment

CREDITS: 3

Description

This course introduces students to the key concepts and processes of EIA in the Caribbean. The intent of the course is to increase students' understanding of the role of EIA in resource management to the extent that they should be prepared to work as part of an EIA team in their field of expertise. Topics covered include: What is EIA; steps in an EIA; preparation of Terms of Reference; baseline studies; mitigation measures; comparison of alternatives; public involvement and the review process.

Assessment

100% Coursework

COURSE CODE: ENVT 6101

TITLE: Geoinformatics for Environmental Management

CREDITS: 3

Description

Spatial information constitutes a significant part of all information used in policy and management decisions. As such, knowledge and skills in spatial information technology can open several career paths, including natural resources and environmental management. This course provides theoretical and practical foundation in Geographic Information Systems (GIS) and remote sensing, which are the core components of spatial information technology. The course covers concepts and techniques for creating, analysing and managing spatial data (including satellite images).

Students will acquire theoretical understanding and practical skills in spatial information technology., using the ArcGIS and QGIS software to analyse spatial data and satellite images to address problems in natural resources and environmental management. This course assumes no previous knowledge or skills in Geo-informatics.

Assessment

70% Coursework, 50% Final Examination

COURSE CODE: ENVT 6102

TITLE: Resource Economics

CREDITS: 3

Description

This course surveys a range of economic issues relating to environmental problems and solutions. Economic principles are developed and applied to evaluate environmental issues such as property rights, externalities, conservation, and public goods as well as public and private decisions involving the use and allocation of natural resources. After an introduction to markets, potential policy and institutional remedies to general environmental market failures are evaluated. This is followed by an introduction to cost-

benefit analysis and economic valuation methods. The theoretical foundations for economic efficiency and optimal use are then developed and applied to the management of natural resources. Specific resource management areas such as forests, fisheries, land, minerals, and water are examined, with special attention given to coastal and marine resources. The course concludes with an examination of the economics of global environmental issues.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6120

TITLE: Measurement and Analysis in Natural Resource Management

CREDITS: 3

Description

This two-part course aims to prepare students for their research projects and lifelong research activities. It covers both quantitative and qualitative methods of data collection and a range of widely or commonly used data analysis techniques that are useful to natural resource and environmental managers. Key statistical concepts underlying the data analysis techniques are explained and hands-on data analysis using statistical software is used to reinforce knowledge and skills.

Assessment

100% Coursework

COURSE CODE: ENVT 6122

TITLE: Fisheries Biology and Management

CREDITS: 4

Description:

This course reviews the global importance and state of fisheries production and examines the information, tools and strategies needed for assessment and management of fishery resources. The course introduces students to biological assessment techniques suitable for tropical fishery resources, and provides an overview of current fishery management practice, needs and constraints. Emphasis is given to marine capture fisheries, tropical species and Caribbean case studies. The impacts of international agreements, the FAO

Code of Conduct for Sustainable Fisheries and recent developments in ecosystem-based management are all considered in the context of fisheries management in the Caribbean.

Topics include: Importance and state of world fishery resources, aquaculture and current management issues; traditional and genetic-based stock identification techniques; stock dynamics (growth, mortality, reproduction/recruitment rates of individuals and populations); introduction to yield prediction modeling and interpretation; framework of international law and voluntary guidelines; influence of NGOs and market demand (eco-labelling); prioritizing management goals; selecting management objectives and performance indicators; review of management tools for controlling catch and effort (quotas, gear restrictions, minimum size, limited entry, closed seasons, MPAs); implementation strategies (top-down and community-based approaches); and policy direction in the Caribbean (climate change adaptation, ocean policy and MSP, and blue economy).

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6255

TITLE: Disaster Risk and Resilience in Caribbean Tourism

CREDITS: 4

Description

This course explores the concept of disaster risk reduction for the tourism sector, paying attention to its complementarity to issues such as sustainable tourism and climate change adaptation. In addition, it recognizes that the majority of persons employed in the tourism sector (both formal and informal) are women, and that women and men experience different levels of hazard exposure and risk – therefore the concept of gender mainstreaming will also be explored.

The course is designed for individuals who have an interest in, or work in, the tourism sector, with a specific view of understanding and responding to hazards that impact tourism and travel. It aims to equip students with the knowledge and skills to apply disaster risk reduction principles and strategies to enhance the resilience and sustainability of the Caribbean tourism sector.

Assessment

100% Coursework

COURSE CODE: ENVT 6126

TITLE: Coastal Dynamics and Management

CREDITS: 4

Description

This course examines the dynamics of principally critical abiotic coastal resources of the Caribbean, with emphasis on the physical processes that shape them, and the linkages and interactions among them. Topics will include wind-generated waves and their properties, including refraction, diffraction and reflection; coastal erosion, transport, deposition and resultant geomorphologic features; the sediment budget and beach stability; and a review of coastal management tools examining their advantages and disadvantages. These tools will include the use of water quality standards, coastal land use controls, coastal protection structures and various approaches to integrated coastal zone management.

Assessment

60% Coursework, 40% Final Examination

COURSE CODE: ENVT 6127

TITLE: Ecology and Management of Coral Reef Ecosystems

CREDITS: 4

Description

This course gives students the essentials of oceanography with a focus on the Caribbean. It then introduces students to the distribution, biology, ecology and dynamics of critical tropical coastal marine ecosystems (coral reefs, mangroves and seagrasses) with emphasis on the Caribbean and site visits to examples of these ecosystems in Barbados. The course provides an understanding of the full suite of values and the key anthropogenic stressors of coral reefs and their associated ecosystems. This includes an overview of their current status and possible future scenarios. Students will consider options for tackling global stressors and discuss appropriate mitigation measures to address specific local stressors including a review of the pros and cons of ecosystem restoration techniques and marine parks. Students will be introduced to the ecosystem-based management approach and will gain hands on experience with coral monitoring (rapid appraisal) and mangrove monitoring (long-term) and some of the complex issues of managing a multiple use marine park.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6130

TITLE: Climate Dynamics and Modelling

CREDITS: 4

Description

This course develops knowledge and skills for modelling and simulating climate and interpreting the results from climate models. It demonstrates the contribution and relevance of interdisciplinary research and policy considerations as inputs to climate modelling.

Topics include:

Constituents, structure and primary atmospheric processes; weather, climate and climate variability; climate driving forces, including greenhouse gases and their effects; anthropogenic aerosols and volcanic eruptions; ultraviolet radiation, ozone and CFCs; global energy balance including oceanic circulation; numerical modelling and climate models; scaling issues and limitations of General Circulation Models; climate sensitivity; monitoring, observation and modelling of past climates and trends; global warming, hurricanes and El Nino Southern Oscillation (ENSO); future climate trends and changes.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6131

TITLE: Policy Response to Climate Change

CREDITS: 4

Description

This course evaluates a broad suite of policy approaches to GHG reduction and climate stabilisation, in the context of the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. It develops knowledge and skills for policy formulation, and for strengthening negotiating capacity to protect regional interests in the global climate change debate. In addition, the course is a forum

for disseminating continuous information to students on CARICOM and SIDS initiatives in the areas of adaptation and mitigation, and also provides updates on the significance of outcomes of the Conference of the Parties (CoP), which is held annually.

Topics include:

- the international policy response: UNFCCC, Kyoto Protocol and Paris Agreement as instruments for atmospheric stabilisation;
- policy approaches of developed and developing countries;
- negotiating positions of major UN Groups: European Union (EU), Japan-United States-Canada-Australia-New Zealand (JUSCANZ), Group of 77 and China (G77), Environmental Integrity Group (EIG), Organisation of Petroleum Exporting Countries (OPEC), and the Alliance of Small Island States (AOSIS); application of key negotiating tenets, including the precautionary principle and common but differentiated responsibilities;
- exploring elements of a CARICOM negotiating position.

Assessment

30% Coursework, 70% Final Examination

COURSE CODE: ENVT 6133

TITLE: Climate Change Impacts: Mitigation and AdaptationCREDITS: 4

Description

With a focus on SIDS, the course examines the *observed* and *projected* impacts of climate change (adverse and beneficial), and the role of mitigation and adaptation interventions (and their evaluation) in minimising the negative effects of change. The course will also explore the potential for climate change to cause shifts in marine boundaries, and potential international, regional and national responses. The course facilitates understanding of adaptation concepts, frameworks and tools, and the use of instruments (e.g. tradable emission permits, taxes, insurance schemes) in theimplementation of adaptation and mitigation strategies. Students will survey sector-specific adaptation and mitigation options and the potential for strategies in one sector to result in *maladaptation* in another.

Assessment

100% Coursework:

50% Individual Work: Adaptation

50% Individual Work: Mitigation

(Students must pass each individual component of the coursework to pass the course)

COURSE CODE: ENVT 6238

TITLE: Surface and Groundwater Hydrology

CREDITS: 4

Description

This course introduces students to hydrological concepts and principles that underpin scientific and operational management of water resources. The course starts by providing a context for, and implications of, the varied hydrogeological characteristics for water resource endowment and management in Small Island Developing States in the Caribbean. The hydrologic cycle and associated processes that underpin water flows and storage above and below the ground are discussed. These include precipitation, infiltration, percolation, evaporation and runoff. General guidance on measurement and analysis of the hydrologic components will be provided. A catchment approach is adopted to understand these processes, as well as the storage of water on the surface and below the ground. The utility of hydrological principles and analysis for water resources management will be discussed, complemented with hands-on activities. Case studies will be provided to help deepen understanding and the application of the knowledge gained through the course to relevant problems in the Caribbean and elsewhere.

Assessment

60% Coursework, 40% Final Examination

COURSE CODE: ENVT 6220

TITLE: Water and Wastewater Management

CREDITS: 4

Description

The focus of this course is on the technical, managerial and organisational aspects of making water resources available to consumers and the removal, treatment and disposal of wastewater. Students will be provided with an understanding of the issues surrounding

aspects of water and wastewater management such as water collection and treatment, transportation and distribution of water; water demand estimation, supply and demand management; water distribution in urban and rural areas; water quality standards and measurement; definitions and characteristics of wastewater; the potential environmental and public health concerns; sanitation, different wastewater collection and wastewater treatment and disposal systems; green, grey and black-water recycling and reuse; residuals management; storm-water drainage and management in urban and coastal areas; policy, legislation and regulations; financial mechanisms and institutional arrangements. In addition, the potential impact of climate change on water and wastewater management and the range of responses, adaptations and mitigations measures will be explored.

Assessment

100% Coursework:

15% Discussions & Participation50% Individual Assignments

35% Group Assignment

(Students must pass each individual component of the coursework to pass the course)

COURSE CODE: ENVT 6230

TITLE: Water Management and the Environment

CREDITS: 4

Description

Integrated water resources management considers how water should be managed by considering the multiple viewpoints and factors that need to be taken into account when making decisions and taking actions. The competing uses of water in the natural, social and economic environment requires knowledge and expertise from across many different disciplines.

The aim of this course will be to examine the varying aspects that constitute water resources management in island and non-island countries in the Caribbean region; and the relationships between the technical, natural, social, economic and political environment, particularly those issues facing SIDS. The course places an emphasis on the economics of water and water resources, as well as on legal and policy perspectives.

Course material will cover: Concepts of catchment/watershed management, integrated water resources management; national and international laws and institutional arrangements that impact on water management; economics; the political ecology of water; and the impacts of water resources developments including land/ marine

interaction issues, decision support tools and development pressures.

Assessment

100% Coursework:

15% Discussions & Participation

20% Presentations

40% Individual Assignments

25% Group Assignment

(Students must pass each individual component of the coursework in order to pass the course).

COURSE CODE: ENVT 6235

TITLE: Soil and Water ConservationCREDITS: 4

Description

This course aims to facilitate students' understanding of the importance of soil to human existence and development, and land management approaches to protect and secure soil and water. It covers the nature and properties of soil, land management approaches to enhance soil health and secure soils, land degradation processes and management, and concludes with the emerging concept of land degradation neutrality. The course will be delivered via a combination of lectures, discussions, demonstrations, computer-based simulations and field work. It is targeted, primarily, at the MSc. NAREM students in this specialisation but also other professionals and students interested in understanding or analysing the relationships between food systems and environmental sustainability.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6236

TITLE: Hydro-meteorological Risks and Water-Resource Management

CREDITS: 4

Description

This course aims to enable students to understand weather or climate and hydrological combinations that underpin water-related disaster. The course covers the relationships and interactions between the physical processes of weather or climate and the water

cycle to create or exacerbate risks of undesirable hydrometeorological events, the nature of these events and how to assess, monitor and manage the risks in the context of water resources management. The impacts of climate change on hydrometeorological processes and risks of undesirable events are covered, as well as the human dimensions of risk amplification and/or attenuation in water resources management decisions.

Assessment

100% Coursework

COURSE CODE: ENVT 6240

TITLE: Land Use and Environmental ResilienceCREDITS: 4

Description

This course exposes students to the multi-scale and multi-dimensional interconnections between land use, resource sustainability and environmental resilience. The course focuses on analysis of how interactions between human and natural environments generate disaster risks and how these risks can be mitigated or managed through the instrument of land use. Central to the course is the evaluation of land-use contexts (across varying spatio-temporal scales) in which environmental and natural resource management problems or disaster risks occur or can be addressed using both quantitative and qualitative approaches. Thus, issues are analysed from the functional and constituent perspectives in the nexus of land-use and resilience. In addition, students will gain advanced practical experience in GIS and remote sensing applications such as land-use/land cover mapping and analysis, and simulation of future land-use configurations to inform resilient development.

Assessment

100% Coursework

COURSE CODE: ENVT 6245

TITLE: Biodiversity and Protected Area Management

CREDITS: 4

Description

This course exposes students to the principles and practices of sustainable management of biodiversity, protected areas and related ecosystem services. The imperatives of protected areas, core concepts of protected areas and effective management approaches

for protected areas will be presented. Major international instruments and governance frameworks for biodiversity and protected area management will be studied. Students will be introduced to quantitative analysis of biodiversity and ecosystems in support of sound management and decision-making. In addition, students will learn the tools for evaluating management effectiveness.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6250

TITLE: Tools for Environmental and Food Systems Analysis

CREDITS: 4

Description

The course exposes students to the complex interactions between the environment and the food system that impacts food security and human health, and the tools for analysing these interactions. The course covers topics in food systems and food security analysis, agro-environmental management, resource use and flows in food systems, systems thinking and resilience thinking, and advanced topics in GIS and remote sensing for environmental and food systems management. The course will be delivered via lectures, computer-based analysis, workshops and discussions. The course is targeted, primarily, at the MSc. NAREM students in this specialisation but also other professionals and students interested in understanding or analysing the relationship between food systems and environmental sustainability.

Assessment

50% Coursework, 50% Final Examination

COURSE CODE: ENVT 6900

TITLE: Research Project

CREDITS: 8

PREREQUSITES: Completion of all other courses in MSc Natural Resource & Environmental Management

Description

The Research Project is to be undertaken immediately after the end of Semester II from

July to October. Students are required to submit their research paper at the end of this time period for examination. Research projects are typically supervised by CERMES faculty and must be in priority research areas relevant to the students' specialisation streams. External non-CERMES persons can also act as supervisors, but they must be qualified experts in the relevant research areas, and approval must be granted with CERMES faculty overseeing the project as secondary supervisors.

Assessment

100% Coursework

COURSE CODE: ENVT 6990

TITLE: MPhil Environmental Studies

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: ENVT 8000

TITLE: PhD Environmental Studies

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: FSAT 6000

TITLE: Communicating Science

CREDITS: 3

Description

This revised course explores the multifaceted realm of modern scientific communication, developing the theoretical knowledge and practical skills necessary to effectively disseminate complex scientific information. The curriculum delves into the fundamental principles and models of science communication, examining various modes of conveying research findings and identifying appropriate outlets for their dissemination. It teaches how to overcome communication barriers, refine writing techniques for various purposes, and master the art of visual presentation. The course also addresses crucial aspects such as ethical considerations, The UWI corporate branding, and the development of compelling research proposals. By emphasizing precision, clarity, and audience engagement, this course promotes the development of skilled communicators in scientific fields, capable of conveying their work's importance.

Assessment

100% Coursework

COURSE CODE: FSAT 6002

TITLE: Experimental Design and Analysis for Non-statisticians

CREDITS: 3

Description

This course introduces the basics of experimental design and analysis, focusing on real-world applications. Designed for non-statisticians, it emphasizes understanding over mathematical intricacy and explores the tools needed to plan, execute, and interpret experiments in varied fields of investigation in the natural sciences.

Assessment

100% Coursework

COURSE CODE: FSAT6004

TITLE: Principles and Practice of Scientific Research: Ethics, Methodology, and Communication

CREDITS: 3

Description

This graduate-level course delves into the intricacies of scientific research, from its philosophical foundations to practical applications. It facilitates hands-on experience with the research process, developing crucial skills in information management, critical analysis, and effective communication of scientific findings. The curriculum emphasizes research ethics, covering topics such as human subject protection, data integrity, and responsible conduct in scientific practice. Through comprehensive study of various research methodologies and exposure to intellectual property concepts, it enables the seamless navigation of the complexities of modern scientific inquiry. Overall, this course develops the knowledge and skills necessary to design, conduct, and disseminate research that adheres to the highest standards of scientific rigor and ethical integrity.

Assessment

100% Coursework

COURSE CODE: GRSM 6001 (common to all MPhil students)

TITLE: MPhil Research Seminar 1

CREDITS: 0

Description

This is the first of two research seminars to be presented by the MPhil student.

Assessment

Pass/Fail

COURSE CODE: GRSM 6002 (common to all MPhil students)
TITLE: MPhil Research Seminar 2
CREDITS: 0

Description
This is the second of two research seminars to be presented by the MPhil student.

Assessment
Pass/Fail

COURSE CODE: GRSM 8001 (common to all PhD students)
TITLE: PhD Research Seminar 1CREDITS: 0

Description
This course is the first of three research seminars to be presented by the PhD student.

Assessment
Pass/Fail

COURSE CODE: GRSM 8002 (common to all PhD students)
TITLE: PhD Research Seminar 2
CREDITS: 0

Description
This is the second of three research seminars to be presented by the PhD student.

Assessment
Pass/Fail

COURSE CODE: GRSM 8003 (common to all PhD students)

TITLE: PhD Research Seminar 3

CREDITS: 0

Description

This is the last of three research seminars to be presented by the PhD student.

Assessment

Pass/Fail

COURSE CODE: MATH 6002

TITLE: MPhil Mathematics

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: MATH 8000

TITLE: PhD Mathematics

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: METE 6900

TITLE: MPhil Meteorology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: METE 8000

TITLE: PhD Meteorology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: MGMT 6139 ***(course from Faculty of Social Sciences)***

TITLE: Leadership and Organizational Behaviour

CREDITS: 3

Description

Effective leadership and management of human interactions is a critical aspect of organizational success. This course focuses on leadership and individual and group behaviour within organizations. The course focuses on the managerial application of knowledge to issues such as motivation, group processes, leadership, organizational design structure and others. The course makes extensive use of case studies, hands on experimentation, role playing and simulations in exploring the issues of leadership and human behaviour in an organizational setting.

On completing this course, students should be able to: Explain and evaluate the major theories of leadership and organizational behaviour; Explain and evaluate the major theories guiding organizational design and structure; Assess employee motivation and leadership effectiveness; and Trace the development of organizational culture;

Assessment

40% Coursework; 60% Final Examination

COURSE CODE: MICR 6000

TITLE: MPhil Microbiology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: MICR 8000

TITLE: PhD Microbiology

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

AssessmentPass/Fail

COURSE CODE: NARM 6000

TITLE: MPhil Natural Resource Management

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 50,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

COURSE CODE: NARM 8000

TITLE: PhD Natural Resource Management

CREDITS: 0

Description

Students are required to register for this section every semester and are expected to produce a thesis of approximately 80,000 words under the supervision of a member of Faculty.

Assessment

Pass/Fail

LIST OF SUBJECT CODES WITH DESCRIPTIONS

Courses are listed in the Class Schedule in the Cave Hill on-line system by **subject area**. The following is a list for all **subject codes** used in this handbook for easy reference at registration.

Subject Code	Subject Area	Notes
ACCT	Accounting	
BIOC	Biochemistry	
BIOL	Biology	
BISF	Biosafety	
CHEM	Chemistry	
COMP	Computer Science	
ECOL	Ecology	
ELET	Electronics	
ENVT	Environmental Studies	
FSAT	Faculty of Science & Technology	*Faculty Course*
GRSM	Postgraduate Research Seminars	*Research Students*
MATH	Mathematics	
METE	Meteorology	
MGMT	Management	
MICR	Microbiology	
NARM	Natural Resource Management	
PHYS	Physics	